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Editorial

Post-Graduate Medical Training in the Commonwealth – Frustrations and Hopes*

by *Dr. G. A. Sreenevasan*
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THE NEED for medical care is universal and the aim of doctors all over the world is universal. This aim is to provide, to the best of our ability and within the means available, the highest quality of care to our patients. Due mainly to historical reasons our medical education, especially post-graduate medical education, has been linked with the British system, though increasingly many of us have been influenced by our contact with medical schools in the United States of America and other countries.

In the developing countries of the Commonwealth there has been a rapid expansion of the Medical and Health Services since independence. Our Governments are anxious to make available medical and health services to the remotest parts of our countries. The public at large, in most of our countries, are becoming increasingly aware of the need for good, and wherever possible, specialised medical care in the various disciplines of Medicine and Surgery. As a result there has been pressure on the Universities and Academics for providing, for an ever increasing demand in the number of doctors both for primary and specialised care to a wider and wider section of our population at a quicker and quicker pace. This unfortunately has led to an emotional reaction of some to silence the voice of reason, prudence and pragmatism of a few. As a result even the minimum standards that are required for admission of students and selection of teachers are compromised. So there has been a steady fall in standards all round. Academicians and distinguished teachers who have been anxious to develop and maintain international standards of excellence in their respective universities and medical schools eventually retreat into their laboratories, private clinical practices or emigrate giving rise to a "brain drain". Medical Schools and hospitals with good, dedicated and high quality undergraduate teachers are a *sine qua non* for the development of Post-Graduate Medical Training and Continuing Medical Education in any country. When this is not available it acts as one of the foremost causes for frustration of our up and coming young doctors who are planning their post-graduate training.

I recently read an article by one of the Indian Educationists wherein he quoted a discussion that he had had with Sir James Duff of Durham in 1951. I feel it may be appropriate to recall here the words then spoken by Sir James. Sir James had said and I quote, "The heady pace of expansion, the paucity of resources, the mood for reckless piece-meal reform, the chronic delaying procedures, the intrusion of politics and above all, the not exacting enough standards of recruitment of teachers and enrollment of students, might, in course of time, make "higher education" a liability for the nation rather than its springboard for development."

While it must be admitted that there is yet no perfect method for selecting the right type of students to be trained as doctors, it is known that wherever minimum academic requirements of merit have been compromised by other considerations, standards generally tend to fall. Whether we like it or not this would invariably lead to a drop in the quality of care for the patients.

Not all students who are motivated to become doctors are able to enter medical schools in their own countries for lack of sufficient places and other reasons. So parents have to tighten their belts to send their children overseas to what they know to be good and established Universities. But the Universities in the developed countries of the

* Based on a talk delivered at a Seminar of the Commonwealth Medical Association held in New Delhi on 8th December, 1976.

Commonwealth are, for their own reasons, laying down restrictions for such admissions. It is a pity that the fees in some countries have been increased considerably. The admission of Asian and African students to universities in developed countries of the Commonwealth is a very useful way to keep the links within the Commonwealth. There may be some difficulties and problems encountered – this I do not deny. But the good-will, under-standing and friendship that is thus created and engendered far outeighs any other considerations and problems. As a product of one of the Commonwealth Universities, I am happy to quote recently written words of the Vice-Chancellor of the University of Adelaide (my *alma mater*) Professor Badger. Professor Badger said, "When I first became an undergraduate in 1935, it is fair to say that the Australian Universities had not yet come of age: they were entirely local establishments. My own friends among the undergraduates were all Australian-born and indeed I can remember only one or two who had been born in the United Kingdom. Foreign-born students must have been extremely rare. When I was an undergraduate, therefore, I had no opportunity to meet students from other countries, and I was the poorer for this; but it also indicated that the Australian Universities were not then the international associations which all universities must be.

"The Universities have been transformed by the admission of foreign students and especially the South East Asian students. Our own students are no longer so inward looking and now take a much more international view".

"I think we have all learned from our foreign students and it will be a retrograde step if we are deprived of their company and scholarship."

"Most of the students who come here from foreign countries return home when they graduate and it is our experience that they continue to remember their time in Australia, and regard this country with great affection".

"The goodwill generated by the Colombo Plan and by encouraging foreign students to study here, is enormous".

"The remission of fees for foreign students is a small price to pay for this international goodwill – on both sides".

Post-Graduate Education:

It is not for a lack of patriotism that good doctors leave their own countries through the easiest escape routes to further their post-graduate medical education and training overseas but for reasons of frustrations in their fight against bureaucracy and lack of opportunity to further their post-graduate studies in the specialities of their choice in their own motherland. But alas! not all who go overseas are able to get appointments in good teaching or training hospitals. Most have to take on appointments which the "locals" do not want. This only adds to their frustrations. Various reasons are advanced by the developed countries as to why doctors from overseas are unable to get good training posts. Some are genuine, while it is easy to see in others just complicated excuses for not wanting these doctors. Some have been fortunate to get attached to good teachers in good institutions. But the majority are far less fortunate. Should not the Commonwealth Medical Associations consider it as one of their objectives to guide genuine post-graduate students get suitable posts for training?

In the final analysis each of our countries has to develop our own post-graduate training programmes and eventually establish bodies that can conduct examinations and grant diplomas. Each country has its own peculiar requirements and needs and as such certification has to satisfy the local needs. The profession will have to set the standards, organise and run higher examinations if necessary with the help of the older colleges to provide for local certification of specialists. We must realise, from the experience of others, that unless the initial programme that is launched is appraised critically and is of a high standard and accepted internationally such local certification may not be attractive to the up and coming doctors. Therefore we have to be concerned not only with the establishment of high standards for our own specialists but also in the long run, obtain the eventual acceptability of our own diplomas among men and institutions of good standing the world over. We in Malaysia have so far used the Royal Colleges of the United Kingdom, Australia and Canada and the Specialist Boards in the United States of America to evaluate the minimum requirements for our specialists. Because these institutions have never allowed their standards or requirements to be compromised, their diplomas are still coveted and respected. In Malaysia with the support from our Ministry of Health and with the help of the Board of Post-graduate Medicine of the University of Malaya and the Royal Colleges of the United Kingdom and Australia it has been possible to conduct the first and even the second parts of the examination in Surgery, Anaesthetics, Obstetrics and Gynaecology and the first part of the Membership in Medicine, locally. But now we feel that the time is more than ripe for us to make available a system of training and examination of our own and have a professional body which can conduct such examinations. We also feel that the standard of

medical care in the ultimate analysis is best safe-guarded by the professionals themselves.

With the establishment of our second medical school in our National University it will be possible for us in the future to utilise not only the facilities of the University of Malaya, but also the facilities and staff of our National University and the specialists in the government and private sector to conduct our courses locally. Doctors in developing countries are overwhelmed with routine work and there is usually a chronic shortage of trained teaching staff. We have always welcomed teachers from other parts of the Commonwealth to help run post-graduate courses for the first and second parts.

Post-Graduate Organisations:

There is at the moment a great deal of rethinking as to the nature and form that a post-graduate organisation granting diplomas should take. We have had in Malaysia since 1957 a body known as the Academy of Medicine with specialists from all fields of medicine which has as its over-riding objectives the promotion and maintenance of the highest standards of ethical practice. It has been wisely said that the "generality of medicine" cries out for a unifying and coordinating force. Some of us feel that the Academy of Medicine can unify the profession and oversee the rightful growth of the older and several of the newer and dynamic specialities. The Academy conducts Congresses of Medicine annually with its sister Academy in Singapore, the venue alternating each year in the respective capitals. There is one School of thought which feels that colleges should be established on the pattern of the United Kingdom and Australia while there is another school of thought which believes that in a country like Malaysia with a small number of specialists and several medical schools, it would be better to adopt the pattern of Canada, South Africa, Glasgow or the American Boards.

Training of Specialists in Oversea Countries

At this point it may be useful to review briefly the type of training and certification that obtains in some countries.

The U.S.A.:

In the U.S.A. after obtaining the basic medical training, those who wish to specialise in their fields have to sit, after the required period of training, for examinations conducted by the respective Boards.

There has recently however been a great deal of re-thinking even in this system which has been in practice for many years. The number of Boards have prolifilerated and recently concern has been expressed by no less a person than a member of the National Board of Medical Examiners, Dr. Robert Chase that "the proliferation of certification in medical specialities may be counter productive in terms of health care of the United States population at large". His view is that continuing medical education and research is what is important for the increase of medical knowledge. He has suggested that more research should be directed to the quest for other strategies for improving specialist care in the U.S.A. as alternatives to certification.

United Kingdom

In the United Kingdom for historical reasons the Royal Colleges have provided the required post-graduate training and the granting of post-graduate diplomas. In recent years there has been a considerable self-examination of post-graduate programmes in the United Kingdom. One estimate has it there are 107 post-graduate diplomas in the United Kingdom, and at a conference held in Glasgow in 1967 "multiple diplomatosis" was diagnosed as one of the problems facing post-graduate qualification in the United Kingdom.

In March 1973 the President of the Royal College of Surgeons of England Sir Thomas Home Sellers, the President of the Royal College of Obstetricians & Gynaecologists, Prof. Stalworthy and other distinguished medical teachers like Sir John Peel, Sir John Rochardson and others had suggested the formation of a British Academy of Medicine to represent all specialities. They wanted a British Academy of Medicine to control even loosely the various diplomas and post-graduate medical training programmes in the United Kingdom. But I think because of their historical background the British Colleges have hesitated to undertake such a radical change. It is interesting that the one College in the United Kingdom, the Royal College of Physicians and Surgeons of Glasgow was unique in that since its formation in 1599 it had both the surgeons and physicians, in the same faculty. According to an Editorial in the British Medical Journal of 10th July, 1976 under the heading, "Glasgow's French Connection", the greatest contribution of this College was "the bringing together of Physicians and Surgeons in a lasting spirit of cooperation". According to the same editorial there is amongst the younger members and fellows in Scotland a growing support for the idea that the Colleges in Scotland should come together with all specialities, including primary care to form a Scottish Academy of Medicine".

Australia and Canada

The pattern of post-graduate training and certification in Australia and Canada was basically similar to that of the United Kingdom.

South Africa

The College of Physicians and Surgeons was established in 1955. In 1958 this was converted into the College of Physicians, Surgeons and Gynaecologists of South Africa. Finally in 1972 all these were incorporated and the College of Medicine of South Africa was established. This College has all its specialities under its fold including general practice.

Planning for the Future

In countries which have not yet embarked on training and certification, great deal of thought has to be given to decide which pattern to adopt for the purposes of training and certification of their doctors in the various specialities.

In this sphere it would be of considerable help to the developing countries of the Commonwealth if expertise could be provided either through the Commonwealth Fund for Technical Cooperation (C.F.T.C.) or the Colombo Plan to train our students locally to attempt the First and Second Part of the Examinations. Medicine, Surgery and Obstetrics is still an art besides being a science, and as such the techniques of the art have to be passed down from master to trainee. I am sure good and dedicated teachers from the senior members of the Commonwealth countries could come and help our post-graduate students in learning correct and advanced techniques. I would like to suggest a sort of a Medical Professional Peace Corps within the Commonwealth financed by the various funds available for such purposes. Obtaining the diploma is just the beginning. But it is at least the end of the beginning. There is a lot to be said for experts from developed countries in the Commonwealth coming to developing countries to impart such knowledge and skills, and train students in their home territory. Subsequently such trained students and senior and junior consultants could go to the developed countries in the Commonwealth at varying periods of time to keep abreast with more recent advances and techniques.

It is not always necessary that such experts should come from the Western hemisphere alone. There are many good teachers in the Asian and African parts of the Commonwealth who could take part on a regional basis in such an exchange programme.

One other method in which the senior members of the Commonwealth could help the developing countries is by adopting the local university as a sister institution of a senior Commonwealth University. This will allow a closer liaison whereby advice and interchange of ideas may occur. It would also be helpful in structuring training programmes at both under-graduate and post-graduate levels. Interchange of staff members at various levels would be useful not only for the maintenance of standards but also for helping the developing countries to train medical and para medical personnel. This would also help doctors from developed countries to understand the problems of their counter-parts in developing countries. It cannot be too strongly emphasised that the quality of teachers sent to developing countries must be of a high order with a spirit of dedication and service. Otherwise the whole exercise will be a failure and a waste.

There is no doubt that if opportunities and working conditions are improved and good training programmes and continuing medical education provided, doctors in developing countries will have a sense of belonging and gain considerable satisfaction of providing a high standard of medical care for their people. In this manner it will be possible to turn frustration into hope. The above problems have been discussed several times before. Can we not now try and implement them with more sincerity?

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Mental Illness in the Orang Asli (Aborigines) of West Malaysia

by Eng-Kong TAN *and Hubert E. ARMSTRONG, Jr.*

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University of Malaya.

Introduction

THERE ARE about fifty-three thousand Orang Asli in Malaya. They are an exceedingly mixed people with distinct divisions of language, social organisation and physical type. Nevertheless, it is possible to distinguish three major groupings. The most primitive and at the present time the smallest group consists of the Negritos. They are true nomads, moving about hunting small animals and gathering jungle roots mainly in the northern states of Malaya. The second and largest group are the Senois. They are the most advanced and many of their tribes are in contact with towns in the central areas of Malaya. They are traditionally semi-shifting agriculturists and use the blow-pipe in their hunting. The third group are the Proto-Malays who are found mainly in the south of Malaya. They lead a life that is similar to the life of Malay kampong dwellers and those that live along the coasts gain a living from the sea. Each of the three groups of Orang Asli is composed of six tribes (see table 1).

The earliest mention of the extent of mental illness among the aborigines of Malaya seems to have been made by Polunin[1] in 1953. In his comprehensive article covering almost all areas of aborigine health he devoted a small section to "The Mental Characteristics and Diseases of the Nervous System" where he referred to the Malayan aborigines as a "timid, gentle people, little afflicted with aggressive tendencies", "their normal defence is by flight". In his study group of four hundred and fifty aborigines, he found three mentally subnormal persons of whom one was a deaf mute. There was no record of other psychiatric illness.

Many authors have referred to the close social existence, kinship and cooperation of the aborigines especially in major tasks. Sharing of many of their possessions is also part of their normal behaviour. In terms of psychiatric symptomatology, Noone[2] was told by the Senoi (the largest sub-division of the Orang Asli) that "the chief symptom of a certain youth's insanity was the fact that he kept food to himself." Other than these brief references to mental illness in the Orang Asli, reports of members of a tribe with abnormal behaviour have been anecdotal and reported from third persons.

Psychiatric Services. The Medical Service for the Orang Asli provides health care in the villages, at jungle medical posts and at Gombak Orang Asli Hospital (see figure 1). The first line of treatment, however, is the medicineman of the tribe. Among many tribes the "halaq" or magician treats the mentally-disordered with incantations, holy water (ayer jampi) and the imposition of taboos (pantang). This is especially so for neurotic disorders and milder forms of psychosis. When the abnormal behaviour of the mentally ill person disrupts the life of other members of the "saka" (or community) either through direct violent behaviour or deviant behaviour like stealing, members of the tribe decide jointly with their headman what actions should be taken. There is great variation among tribes as to disposition. One extreme case has been cited where the psychotic person is tied to a tree for days without food. He is believed to have angered the god of thunder (Karei), and hence should be left in the hands of this supreme deity who is believed to control thunder and lightning. Another tribe which also believes in evil spirits would typically make an

Table I

Distribution of psychiatric patients by Orang Asli tribes for years 1969-1974

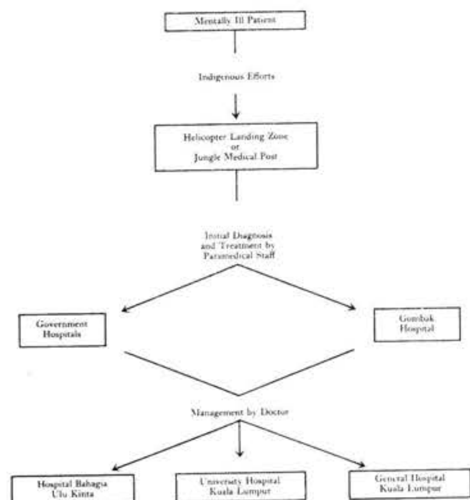
Tribe	Number of patients	Total population*	Number of patients per 10,000 population
Senoi:			
Semai	26	15,506	16.8
Temiar	4	9,929	4.0
Jah Hut	2	2,013	0.9
Semoq Beri	2	1,406	1.4
Mah Meri	22	1,198	183.6
Che Wong	0	272	0.0
Total	56	30,324	18.5
Proto-Malays:			
Jakun	16	8,995	17.8
Temuan	14	8,631	16.2
Semelai	6	2,391	25.1
Orang Kuala	0	1,480	0.0
Orang Seletar	0	277	0.0
Orang Kanaq	0	40	0.0
Total	30	20,814	14.4
Negrito:			
(Kintak, Kensui, Jahai, Mendrig, Bateq, Lanoh)			
Total	0	1,805	0.0

image of the spirit believed to cause the mental illness and would carry out a ritual to appease this spirit. The image would be hanged or burned with the expectation that the person would stop his abnormal behaviour.

Presently most Orang Asli tribes recognise and accept the usefulness of western medicine. This is made easier by the fact that staff at the helicopter landing zones or the jungle medical posts are Orang Asli from local tribes. There are abount seventy such jungle medical posts, each manned by an Orang Asli medical orderly or midwife, assisted by a porter. The medical orderly gives the monthly injections of fluphenazine decanoate, a long-acting phenothiazine, for schizophrenics on maintenance therapy. This is the drug of choice as it obviates the problem of defaulting daily oral medication. For a new case or a relapse of illness in a previously mentally ill person, the orderly consults the doctors from Gombak Hospital during routine helicopter visits or in urgent cases via wireless. Where hospitalization is required, a road vehicle, boat or helicopter will be sent to take the patient to the nearest available government hospital or to Gombak Hospital directly.

Figure I

Psychiatric Services for the Orang Aslis



For the mentally ill Orang Asli, admission into a government hospital that is entirely foreign to him is an added stress. Very often he would feel alienated and problems of communicating with him leave the medical staff exasperated. Other patients tend to stare at the Orang Asli and some, due to a lack of understanding of the way of life of the Orang Asli, will complain to the medical staff about their manner of dressing, eating and voiding in the ward. In larger towns, however, a section of the hospital service is devoted to the care of Orang Asli and here the situation is better, though seldom ideal. The best possible environment for the mentally ill Orang Asli who requires hospitalization is Gombak Hospital, situated twelve miles from Kuala Lumpur along the Selangor-Pahang trunk road. It has a capacity for 450 patients. Mentally ill patients and their accompanying relatives are admitted into the general medical wards.

At Gombak Hospital the mentally ill are well accepted by other patients and receive equal care from the staff. The very fact that they are not isolated or put in separate wards attest to the accepting nature of patients and staff. When difficulties in diagnosis or management arise, medical officers may refer the case to the Psychiatric Unit at University Hospital or General Hospital, Kuala Lumpur either for outpatient consultation or for hospitalization and investigation. Should the illness be one of chronicity coupled with a lack of social support from the tribe, the patient is referred to Hospital Bahagia for long-term hospitalization.

Incidence of Mental Illness among the Orang Asli. At the present it is impossible to keep a record of all cases of mental illness among the Orang Asli. First, the Orang Asli tribes are distributed throughout the country, most of them in difficult and rugged terrain and some in inaccessible areas. Second, many forms of mental illness are not recognized as a state of ill health by various tribes. Among the Orang Asli there is a remarkable attitude of acceptance and non-interference in the affairs of others. Consequently, many forms of non-violent or non-problematic (for others) behaviour which western psychiatrists would view as a minor neurosis or transient situational reaction, are simply not regarded as mental aberrations. Hence only the more severe and problematic cases requiring hospitalization come to our attention. These cases represent the "recorded" incidence of mental illness in contrast to the true incidence.

Method

Records of the main treatment centre for the Orang Asli, Gombak Hospital, were examined to give an idea of the extent and nature of mental illness among these people. The Medical Records Office at Gombak has maintained adequate records of all hospitalised cases for the last six years. A detailed examination of cases admitted for mental illness during this period was conducted.

Results

Between the years 1969-1974 there were eighty-six new cases admitted into Gombak Hospital with a psychiatric diagnosis (see table 1). This is an average of fourteen cases per year (see table 2). The average length of stay for a psychiatric patient at this hospital was 4-6 weeks. This duration of hospitalization is longer than the actual period required for treatment since patients often have to wait for the availability of transport after certified fit for discharge.

Table II

Mental illness among the Orang Aslis by Diagnostic Category*

Diagnoses	Number of Patients	Percentage
Schizophrenia	65	75.4
Mental retardation	6	7.0
Epileptic	4	4.6
Organic psychosis	3	3.5
Drug dependence	2	2.3
Pathological grief reaction	1	1.2
Psychotic depression	1	1.2
Reactive depression	1	1.2
Puerperal psychosis	1	1.2
Personality disorder	1	1.2
Total	86	100.0

*For years 1969-1974

About a third (32%) of the psychiatric cases seen at Gombak were referred to another hospital. Ten percent of these cases are referred to the University Hospital in Petaling Jaya for further investigations and management, four percent to the General Hospital, Kuala Lumpur and eighteen percent to the large psychiatric institution, Hospital Bahagia for long-term management. These are average figures for the last six years. There is a downward trend in the number of cases referred to other hospitals over the years. This is mainly due to the fact that younger medical officers at the hospital have received more psychiatric training as medical

students and feel more confident in managing the mentally ill at Gombak. Currently cases are often referred to other hospitals only for a second opinion while the general management of the patient is carried out at Gombak.

Table III
Psychiatric cases admitted to Gombak Hospital by year

Year	Number of cases
1969	16
1970	8
1971	20
1972	19
1973	12
1974	11
Total	86

Schizophrenia. There is a fairly wide range of mental illness among the Orang Asli as Table II illustrates. The relative proportion of schizophrenics to the entire patient population with psychiatric diagnosis is 75.4%, a figure comparable to the statistics from psychiatric units in hospitals elsewhere in the country. Among schizophrenic cases, the average age on admission is 31 years. This is at best a rough figure because many Orang Asli do not know their age and the figure recorded in the case files is often an estimate. The proportion of male to female schizophrenics is 4:3. There are about equal numbers of acute and chronic schizophrenic cases seen on admission. It is difficult to classify the type of schizophrenia, except in those few obvious cases with florid symptomatology. The usual descriptions of abnormal behaviour include "running around aimlessly", "cutting down trees indiscriminately", "shouting nonsense and singing to himself" and "threatening to harm others." In the mental status examination there are two extremes noted:- "agitated and aggressive behaviour", and "withdrawn and non-communicative." In about half of the cases there is mention of delusions (usually of a paranoid nature) and hallucinations (mainly auditory). During their initial psychosis the great majority of schizophrenics respond to oral phenothiazines alone. Five percent of the schizophrenic cases required electro-convulsive therapy. A third of the cases are placed on fluphenazine decanoate (an intramuscular long-acting phenothiazine) before discharge. Slightly more than one third of the cases (38%) had relapses of their psychotic behaviour requiring readmissions during the six-year period studied.

Other psychiatric diagnoses. There were six cases of mental retardation. These were children ranging from one to five years of age. In one case the mental retardation was due to birth injury and in two cases it was associated with microcephaly and epilepsy. Among the four cases of epileptic psychosis, the psychotic behaviour occurred at an average age of eighteen years. The age of onset of the epilepsy in these cases was recorded. Three of these cases had temporal lobe epilepsy and the fourth was a case of petit mal epilepsy. Of the three cases of organic psychosis, one was of traumatic etiology (bullet wound in left temporal region) and the other two were due to a severe underlying medical illness associated with malnutrition. One case of drug dependence involved the smoking of opium for two years and the other case was iatrogenic in origin, being a dependence on pethidine following fracture of the shaft of the femur.

The case of pathological grief reaction involved the death of the parents and wife of an adult male. The deaths occurred one after another within a period of one month and the patient was noticed to be wandering about in the jungle looking for his lost ones. He subsequently talked to the deceased as if they were in his company. He was transferred to the University Hospital where he was treated with high doses of chloropromazine and required four electroconvulsive therapies before he was well enough for discharge. Another two cases of mental illness occurred after the death of spouses as well – a man became psychotically depressed after the death of his wife and a woman suffered from a mild depression following her husband's death. There was one case of puerperal psychosis. A thirty-five year old housewife became psychotic soon after delivering a dead foetus at five months gestation. She was noted to be incoherent in speech and harboured paranoid delusions as well. However, she responded rapidly to oral phenothiazines. Finally, there was one case considered as a hysterical personality disorder – a middle-aged lady who was hyperventilating and demonstrative after a quarrel with husband over some domestic issues.

In addition to these psychiatric diagnoses, about ten percent of the mentally ill patients had other accompanying medical illnesses, such as bronchitis, gastroenteritis, anaemia and urinary-tract infection.

Distribution of mental illness. The tribal distribution of psychiatric patients at Gombak Hospital is shown in Table 1. The Senoi is the group most exposed to and influenced by urban areas in the country. It has the highest number of patients per ten thousand population in the last six years (18.5/10,000). The prevalence rate for Proto-Malays is

14.4/10,000 population for the same period of time. There is only a very small number of Negrito patients admitted each year into Gombak Hospital. As mentioned earlier, they are the most primitive of the Orang Asli and they remain very much an isolated miniority group. Although there is not a single case fo a mentally ill Negrito admitted into the hospital over the last six years, one cannot conclude that the Negritos are entirely free of mental disorders.

Among the Senoi, the Mah Meri tribe appears to be over-represented in the total psychiatric patient population (183.6/10,000 population). This can be explained by the fact that almost all the Mah Meris live on Carrey Island which is only thirty-five miles from Gombak Hospital. The Mah Meris are renowned for their intricate woodcarvings and as a group they are very much assimilated into general island culture. They earn their livelihood as rubber-tappers, fishermen and oil palm estate workers. They are responsive to the medical care offered through Gombak Hospital and hence a high proportion of psychiatric cases are detected and treated at Gombak Hospital. Follow-up management of chronic achizophrenics is carried out on the island by a medical officer who visits the medical post there at least once a month.

On the whole, it would appear that the "prevalence" of mental illness is related to the degree of assimilation of the tribes with the general population. Among the Senoi, the Semai and Mah Meri tribes are most integrated with the urban population and they have relatively high prevalence rates. Among the Proto-Malay, the Semelai, Jakun and Temuan tribes are the more "civilized" group and it is also these tribes that have relatively high prevalence rates of mental illness compared to the other three tribes (Orang Kuala, Orang Seletar and Orang Kanaf) who live in the remote jungles and coasts of the state of Johore.

In contrast to being influenced by "assimilation" processes, prevalence rates may simply reflect the accessibility of medical care to these tribes. Since medical care is more readily available to tribes which are more integrated with the general population, it is expected that the detection and treatment of these patients would be more comprehensive than in other more primitive groups. Thus it is not possible to consider the integration of the Orang Asli with the rest of the population as having a direct causal effect in their increased prevalence rates of mental illness. In a separate paper by the present authors, however, it has been shown that assimilation of the Orang Asli into a broader cultural milieu has effects on their self-concept. The "body-image barrier" index is lowered among the Orang Asli with greater proximity to outside influence. The Orang Asli are in a process of transition and it could be expected that this process would impact on mental health statistics of the population.

Discussion

It may not be altogether appropriate to study mental illness in a culture like that of the Malaysian aborigines using western-orientated diagnostic categories. Very often the symptomatology of the mentally ill fails to fit neatly into categories. Furthermore, the limits of "normality" and the definitions of "deviant behaviour" utilized by western psychiatry deviated from those employed by the Orang Asli. These norms and definitions even differ from tribe to tribe among the Orang Asli themselves. At this time, however, there is no other frame of reference to use in a study of this nature. Using the diagnostic categories enunciated in the International Classification of Diseases has the advantage of making transcultural comparisons possible and perhaps more meaningful. In search of an alternative, Dentan[4] has presented data of a particular tribe's (Semai) response to mental aberrations. In his interesting socio-anthropological approach to the study of mental illness in this group he has accepted a simplistic classification of behaviour into two dichotomous dimensions: individual problem/not problem and social problem/not problem.

Whatever approach may be used in the study of problematic behaviour among the Orang Asli, the urgency of the issues at hand needs to be emphasized. As pointed out by Baharon the Orang Asli can no longer be regarded as an isolated and insignificant people who have little to offer for the future of the nation. Furthermore, the process of integration of the Orang Asli with the rest of the peoples of the country is no easy matter for "apart from having to overcome the many odds in their quest for a better life, they have had to face a kind of social barrier of illusions, misconceptions and prejudices about them."[5] Further studies into the psychological problems of the Orang Asli could help them to break this barrier and at the same time retain their identity as a people rich in culture and strong in group cohesiveness.

Summary

A brief survey of the psychiatric services available for the Orang Asli is outlined. A study of the psychiatric cases admitted into Gombak Hospital between 1969-1974 according to diagnostic categories and distribution among tribes is presented. Comments are made with reference to the nature of mental illness among the Orang Asli, a culture in transition.

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An Assessment of the Training of the Traditional Birth Attendant of Rural Malaysia

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Introduction

IT HAS BEEN estimated that between 50 to 80% of all domiciliary deliveries in the developing countries of Southeast Asia are attended by traditional birth attendants. For example it is estimated (Verderese & Turnbull, 1975) that 80-90% of domiciliary deliveries in Indonesia, 75% in Thailand, 48% in the Philippines and 50% in Malaysia were attended by traditional birth attendants known variously as *dukun bayi* (Indonesia) *mohtamyae* (Thailand), *hilots* (Philippines) and *bidan kampung* (Malaysia).

During the past two decades, modern midwifery has been gradually introduced into the rural areas of most of the Southeast Asian countries. Not only have young women been trained as auxiliary midwives for work in rural communities but some of the traditional birth attendants have been provided with varying amounts of training in simple hygiene, sterile techniques, elements of modern midwifery and family planning. For example, over 2900 *hilots* in the Philippines (Mangay-Angara, 1974), 8410 traditional birth attendants in East Java (Wasito, 1974) and about 16,000 *mohtamyae* in Thailand (Asavasena, 1974) have received some training.

Unlike the young educated women who are trained as auxiliary midwives, traditional birth attendants are usually older, illiterate women past the menopause who have borne one or more children herself. Being illiterate they are naturally more difficult to train and it has often been said that they infact are unable to benefit from the short training courses which are thus a waste of time and effort. This paper presents the findings of an assessment of the training given to the *bidan kampung* of a rura Malay community in Kedah, Malaysia, and is derived from a larger study conducted in connection with a doctoral thesis (Chen, 1975).

Field Methods

The rural Malay community selected for the study had a total of six resident *bidan kampung*, four of whom had had some training from the local health staff. In order to assess whether the four who had been partly-trained were "safer" than the untrained *bidan kampung*, it was necessary to study in detail their professional activities and to catalogue all the births attended by them over a number of years. Details of the field techniques are given in the doctoral thesis (Chen, 1975) and will not be elaborated here.

The Untrained *Bidan Kampung*

The *bidan kampung* is a highly respected member of the community and is referred to by the honourific title of *tok,* an honour denied to the trained government midwife. The *bidan kampung* usually operates in a relatively restricted geographical area in her own village, and has learnt the art of midwifery from some older *bidan kampung* who might have been a mother, aunt or grandmother. She is respected not only for the physical help she provides but also for her humanitarian approach, being paid according to the means of each family she assists. She is a reassuring figure who is patient, unhurried, and familiar. She knows and understands the local customs and works within the framework of local beliefs and values. For example, since the rural Malay believes that childbirth attracts

various evil spirits including the vampire spirit called the *Hantu Penanggalan,* she will place the leaves of some thorny bush under the raised floor of the house as a protective measure to keep the evil spirits at bay. Such measures might seem foolish or unaesthetic to the culturally ethnocentric but are nevertheless psychologically reassuring to mothers and should thus not be discouraged. Many other practices, some of which are beneficial, others of which may be harmful, have been described elsewhere (Chen, 1973) and will not be elaborated here. Instead, in the paragraphs that follow, only the major harmful practices will be mentioned.

Among the more harmful of the practices followed by untrained *bidan kampung* is a group connected with the management of labour. So long as labour is normal, the *bidan kampung* will not interfere and the outcome is most commonly quite satisfactory. However when labour is prolonged she may massage the uterus and try to by external pressure to forceably expell the foetus, but as has been noted (Sambhi, 1969; Thambu, 1971), rupture of the uterus may occur from such an act. Secondly, when there is a delay or a complication, she will call the *bomoh* (medicine-man) to recite his *jampi* (incantations) instead of sending the mother to hospital. Thirdly, should she perceive an undue delay in the expulsion of the placenta, she will hasten the process by massaging the uterus and force the placenta out by pulling on the umbilical cord. Inversion is a risk, but more commonly post partum haemorrhage will be induced. Fourthly, when the placenta has been expelled, and since she traditionally does not have a delivery kit, the umbilical cord is rubbed with ashes from the kitchen hearth, knotted seven times and cut over a piece of *kunyit* (tumeric) "to keep wind out", the cord being cut with a freshly prepared *sembilu* (sharp sliver of bamboo). The risk from neonatal tetanus is obviously great.

During the postnatal period, the major harmful practices supported by untrained *bidan kampung* are the two related to the cultural belief that the mother must avoid "cooling" foods and must "roast" herself to avoid harm. Thus, during the first 44 days after childbirth, it is culturally believed that the new mother must avoid "cooling" foods such as pineapples, citrus fruits, cucumbers, papayas, and most green leafy vegetables. In addition foods that are *bisa-bisa* ("poisonous") such as prawns, cuttlefish, catfish, cockles, *belacan* (prawn paste) and certain types of fish, as well as foods reputed to "carry wind" such as cassava, cassava tips, sweet potatoes, pumpkin, taro, maize and jackfruit are scrupulously avoided. On the other hand, "heating" foods such as pepper, chillies, smoked or salted fish, eggs and coffee are advocated. In practice, the resulting diet usually consists of rice, pepper, chillies, dried or salted fish and coffee. Such a diet has been found to result in low serum levels for folic-acid, carotene and iron (Wilson *et al.*, 1970).

It is also believed that the mother's body is vulnerable to "cold" and to "wind", and to protect her, the mother is expected to "roast" herself each day. She may either *bersalai,* "roast" herself by lying on a platform built over a fire, or she may *berdiang,* "roast" herself by sitting with her back close to the hearth (Fig. 1). Both these practices are supported and supervised by the *bidan kampung,* and are known to cause congestive cardiac failure and death. A similar phenomenon has been observed among Muslim women of Northern Nigeria who practise a similar form of puerperal "roasting".

Fig. 1
A *bidan kampung,* the traditional birth attendant, supervises the "roasting" of a new mother who sits with her back against a fire. This practice sometimes leads to acute congestive cardiac failure and death.

The Partly-trained *Bidan Kampung*

The training of *bidan kampung* varies from locality to locality both in terms of content as well as in terms of time and effort spent. For the district of Kubang Pasu, training as it was conducted in the 1960s consisted of a simple series of six weekly afternoon classes that aimed to teach the *bidan kampung* the fundamentals of hygiene, cleanliness and asepsis and also aimed to point out the dangers of some of the traditional practices and the necessity of calling for help when danger signs are noted. At the termination of these classes, each *bidan kampung* may be given a UNICEF delivery kit (Fig. 2). However not all such courses were terminated in this fashion and the majority of partly-trained *bidan kampung* in fact are expected to purchase their own locally assembled delivery kits.

Fig. 2
A partly-trained *bidan kampung* prepares to lay out her UNICEF delivery kit in preparation for a birth.

The partly-trained *bidan kampung* are encouraged to attend monthly "supervision classes" where they continue to receive instruction on hygiene, need for antenatal care, need to avoid dangerous traditional practices and the need to refer complications. At these "supervision classes" they are expected to account for all the deliveries attended by them. Guidance is given if any problems are brought up. Delivery kits are inspected and stocks are replenished. Due to the shortage of staff, no supervision beyond these monthly "supervision classes" are provided.

The Effects of Training

The effects of the training of *bidan kampung* can be looked at in terms of whether the partly-trained *bidan kampung* avoid the harmful practices mentioned earlier, whether they are more hygienic in their procedures, whether they refer women for antenatal care and whether they emphasize the need for family planning and for the care of the newborn and young child. The ultimate test is of course that associated with mortality.

Avoiding harmful practices

It was noted that all partly-trained *bidan kampung* were aware of the dangers associated with attempts to forceably expel the foetus or placenta and indications are that, unlike the untrained *bidan kampung*, the partly-trained *bidan kampung* no longer practised these manoeuvres. There is also evidence that, when there is a delay in the progress of labour or when a complication sets in, the partly-trained *bidan kampung* no longer send for the *bomoh* but instead send either for the trained midwife or send the mother to hospital.

In terms of the *berdiang* and *bersalai* practices and of full adherence to postnatal dietary taboos, it was noted that women who select the partly-trained *bidan kampung* are less fastidious than mothers who select the untrained *bidan kampung*. One can only speculate whether this is the result of maternal selection of midwife or the influence of midwife on maternal practices. Nevertheless the fact remains that these two harmful traditional practices are less fastidiously adhered to when the partly-trained *bidan kampung* is the midwife than when the untrained *bidan kampung* is the one.

Importance of cleanliness

There is no doubt that the partly-trained *bidan kampung* are less unhygienic with regard to cutting and dressing the umbilical cord than the untrained *bidan kampung*. Not only have they discarded the *sembilu* (sliver of bamboo) and replaced it with a pair of scissors, but they have also discarded the traditional cord dressings for flavine-in-spirit. As was noted earlier, each has a delivery kit, which has as a minimum, a pair of scissors, artery forceps, cord ligatures and antiseptic lotion, and was able to demonstrate that she knew how to sterilize a pair of scissors or forceps. It was also noted that the best trained was able to sterilize cotton swabs and was cleanest, while the least trained was the least hygienic of the lot.

Antenatal care

It was noted that whereas only five (4%) mothers delivered by the partly-trained *bidan kampung* did not receive any antenatal care at all, five (17%) mothers delivered by the untrained *bidan kampung* did not receive any antenatal care, and that the average number of antenatal visits made by mothers delivered by the two types of *bidan kampung* were 5.4 and 3.4 respectively (Table I), indicating that the training of *bidan kampung* tended to make them more willing to send their patients for antenatal care from the trained midwife.

Table I

Distribution of 283 mothers by number of antenatal visits and type of midwife

Number of antenatal visits	Number of mothers whose most-recent-births were attended by:				Total
	hospital midwives	trained midwives	partly-trained *bidan kampung*	untrained *bidan kampung*	
0	0	2	5	5	12
1 - 2	0	5	13	3	21
3 - 4	3	30	28	12	73
5 - 6	8	44	37	6	95
7 - 8	3	9	21	2	35
9 - 10	2	18	12	1	33
11 - 12	1	5	5		11
13 - 14	1	2			3
Total	18 (6.7)	115 (5.9)	121 (5.4)	29 (3.4)	283

Mean number of visits are given in parentheses.

Mortality rates

Whether the training of *bidan kampung* is effective or otherwise is ultimately related to whether the maternity care given by each is associated with a high or a low mortality. From Table II it will be noted that the mortality rates from neonatal causes, perinatal causes and neonatal tetanus associated with the delivery of the mother by the trained midwife, the partly-trained *bidan kampung* and the untrained *bidan kampung* are inversely related to the amount of training received. Thus the rates are highest among births attended by the untrained *bidan kampung,* intermediate among those attended by the partly-trained *bidan kampung* and lowest among those attended by the trained midwife.

Table II

Mortality per 1000 live births by type of mortality and type of midwife

Type of mortality	Mortality per 1000 live births		
	trained midwife	partly-trained *bidan kampung*	untrained *bidan kampung*
Neonatal mortality	17	29	57
Perinatal mortality	41	54	69
Neonatal tetanus	–	12	34

Source: Chen, P.C.Y. (1975) Midwifery Services in a Rural Malay Community, M.D. Thesis, University of Malaya, Kuala Lumpur.

Limitations in the Training Programme

Instruction in the form of talks rather than of practical demonstration and supervision has been a severe limitation in view of the fact that *bidan kampung* are illiterate. It would be far more effective to use simple practical demonstrations, role-play, and practical exercises to teach *bidan kampung.* Simple practical procedures should first be demonstrated then repeated by the *bidan kampung* until she becomes fully conversant with it. It is important to provide practical instructions at each training session. In Indonesia the *dukun bayi* (traditional birth attendant) works in the antenatal clinic before she has a one-hour training session (Prawirohardjo, 1967).

In addition to the limitations mentioned above and to the *ad hoc* nature of training programmes, with the consequent lack of uniformity of duration and content, another important limitation has been the lack of field supervision and follow-up. Training was limited to the monthly "supervision classes" with no further supervision in the home or during delivery.

In terms of the content of training, the two most important limitations of the training programmes that were assessed were the total absence of any efforts to use the *bidan kampung* as recruiters of family planning acceptors and the lack of any attempts to train them in child care, although it

should be mentioned that more recently family planning has become incorporated into the training programmes.

As was mentioned earlier, *bidan kampung* are distinguished from ordinary women by virtue of their special skills and knowledge concerning childbirth in particular and maternal life in general. Further as highly respected members of the community, their support for any health programme can prove to be most useful while antagonism with them can easily lead to alienation of the programme by the community.

Discussion

The future

On the 20th of May, 1971, the Midwives (Registration) Regulations 1971 (Malaysia, 1971), was gazetted implementing for the first time the Midwives Act, 1966 (Malaysia, 1968) which had come into force on 1st August 1968. The essential difference between the Act of 1966 and previous ones was the fact that for the first time:

> "any person untrained in the practice of midwifery, who within four years of the commencement of the Act (i.e. before 1st August 1972), satisfies the Registrar that such person has during the period of two years immediately preceding application for registration under Part II of the Register, attended to women duiing child-birth"

shall be eligible to practise as midwives under Part II of the Register. Trained midwives who have passed the prescribed examinations and who thus qualify for registration continue to be registered under Part II of the Register, Part I being reserved for nurse-midwives.

Although registration of untrained persons closed on 31st July 1972, in effect registration was still continuing in July 1974 by which date a total of 1,850 had applied out of an estimated 4,000 *bidan kampung*. There is no doubt that many difficulties are being encountered in the implementation of the Midwives Act of 1966, and that the first of these concerns the satisfactory completion of registration so that the Register may be closed. By closing the Register, it will mean that the future recruitment of *bidan kampung* is being prevented and that young women who wish to be midwives may only do so by undertaking the training and examinations prescribed by the Midwives Board. Other problems lie in the area of training of these *bidan kampung* and the enforcement of the Act and its regulations.

Training the bidan kampung

From evidence gathered in the study community, there is no doubt that training does improve the standard of maternity care that the *bidan kampung* can offer. The WHO Expert Committee on Maternity Care (1952) and the WHO Expert Committee on Midwifery Training (1955) recommended that the traditional birth attendant should be trained, the main emphasis being on cleanliness, recognition of symptoms of abnormality during pregnancy and refraining from interference during labour. In 1961, the WHO Expert Committee on Maternal and Child Health recommended that supervision and refresher instructions should be given to traditional birth attendants at periodic intervals. In 1966, the WHO Expert Committee on the Midwife in Maternity Care (1966) noted that training programmes were already going on successfully in a number of countries and indicated that the traditional birth attendant should, with additional preparation, participate in preventive health measures related to the infant and young child. The role of the traditional birth attendant has been of particular importance in the developing countries. In Punjab, India, Taylor and Takulia (1971) report that *dais* (traditional birth attendants) have been a source of statistical information and help by bringing antenatal and postnatal mothers to the clinic.

Mettrop (1970) in relation to Malaysia pointed out that the *bidan kampung* should be seen as an arm of the health services and that her continuous training should be developed with patience and care. At the Inter-regional Seminar on the Role of the Midwife (Wld. Hlth. Org., 1970) it was noted that training should be in rural maternity centres near the vicinity of the midwife station. Arrangements should be such that they do not have to sacrifice income, and methods of instruction should rely mainly on practical demonstration and practice. Explanations and instructions should permit face-to-face interaction and should be in a spirit which makes them regard themselves as willing allies.

Training as a family planning motivator

Neumann *et al.* (1974) noted that traditional birth attendants should participate not only in the local maternal and child health programme but also in the family planning programme. Rosa (1967) pointed out that the *dais* (traditional birth attendants) of India if not adequately mobilized as family planning motivators, tend to be competitively antagonistic and become obstructions to family planning and other official maternal and child health work in the village. However not all efforts to use traditional birth attendants as family planning motivators has been successful. Gardezi and Inayatullah (1966) in their study of the role of the Pakistani *dais* in

family planning, note that the project failed as the *dais* were not opinion leaders but adoption agents. Further, Croley *et al.* (1966) noted that the Pakistani *dais* were responsible for only six per cent of deliveries. However, as noted in the present study, *bidan kampung* are highly respected members and handle substantial proportions of deliveries. Peng *et al.* (1972) noted that, unlike the Pakistani *dais*, almost all *bidan kampung* they studied expressed a willingness to participate in providing family planning services.

Since January 1972, the National Family Planning Board, Malaysia, with the aid of the University of Michigan, has been conducting an action study project to test the feasibility of using *bidan kampung* to recruit and resupply family planning acceptors. A total of 188 *bidan kampung* have been trained between January 1972 and April 1974, each *bidan kampung* being paid (M)$30.00 a month. Details of this project is given in a working manual for nurses (Peng, Ross-Larson and Subbiah, 1974) and indications are that the project will be a success.

Training the bidan kampung in nutrition, and in the care of the new-born and young child

Breast milk together with bodily stores is all that the infant needs for the first six months of life. Breast milk provides the correct dosage of all nutrients at low cost, protects with anti-infective agents, and ensures emotional support at a time when mental development is rapid and critical (Harfouche, 1970; Jelliffe and Jelliffe, 1971). It has been noted (Kanaaneh, 1972) that malnutrition among breast-fed infants is almost absent whereas 30% of bottle-fed infants have been found to be malnourished.

Undoubtedly the influence of respected women such as the *bidan kampung* can contribute substantially to efforts directed at encouraging mothers to breast feed their babies. Jelliffe and Jelliffe (1973) describe how the Indian *dai* (traditional birth attendant) acts as a *doulas* (bondswoman) supplying the additional information, and the emotional, physical and social support and assistance that ensures successful lactation. In addition, it should be possible, by training and enlisting the help of the *bidan kampung*, to influence the diet of children and mothers upon whom are imposed numerous dietary taboos (Wilson, 1971; Chen, 1973; Wilson, 1973).

Not only should the *bidan kampung* be trained to be an ally in nutrition education, but also in the care of the infant and young child. For example, she should be taught how to resuscitate the new-born and to aspirate mucus with a simple "mucus-sucker". In addition she should be taught to look for jaundice and other signs of ill-health and to refer such infants and children to the health centre or hospital for management.

Conclusion

Bidan kampung should be taken into account in the Maternal and Child Health Programmes of rural Malaysia since they are responsible for about 50% of the domiciliary deliveries that occur in rural Malaysia.

The training of the *bidan kampung* is of value and should be further developed, standardised and intensified. In order to prepare the *bidan kampung* for her new role in the Maternal and Child Health Services of Malaysia, her training should emphasize the avoidance of harmful traditional practices, the need for hygiene and asepsis, and the need for antenatal care, family planning and nutritional care of mother and the newborn. Regular supervision of the *bidan kampung* both at the health centre and at home should be developed.

Summary

With the introduction of modern midwifery into rural areas in Malaysia, not only have young women been trained as auxiliary midwives but some *bidan kampung,* most of whom are old illiterate women, have also received some training. In this paper the training of such *bidan kampung* is assessed and some suggestions are made as to the future. It is noted that the mortality rates from neonatal causes, perinatal causes and neonatal tetanus are highest among births attended by the untrained *bidan kampung,* intermediate among these attended by the partly-trained *bidan kampung* and lowest among those attended by the trained midwife.

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Incidence of known Possible Occupational Hazards to Anaesthesiologists – A Retrospective Survey among Anaesthesiologists in Malaysia*

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Introduction

OVER THE last 10 years the problem of operating theatre pollution with its consequences on Anaesthesiologists and other working personnel has emerged to the forefront. Retrospective surveys and studies have pointed the finger at the operating theatre environment as the possible causative factor for certain common clinical conditions amongst anaesthesiologists and their families. Exactly how these conditions are brought about is often not fully elucidated. Circumstantial evidence and animal experimental studies have generally supported these suspicions and have led to preventive methods being advocated. To-date no definite proof is available partly because controlled human studies would be unethical and difficult.

Various claims have been made to show that Anaesthesiologists are more prone to the following conditions because of theatre pollutions (Murrin K.R., 1975).

1. Headaches, irritability, malaise, insomnia, lethargy, depression (Yanagida et al. 1974; Vaisman, 1967).
2. Spontaneous abortion (female anaesthesiologists and/or wives of anaesthesiologists), Askrog and Harvald, 1970.
3. Liver damage (A.S.A. 1974).
4. Renal damage (A.S.A., 1974).
5. Malignancies of lymphoid and reticulo-endothelial tissues (A.S.A. 1974).
6. Higher incidence of female children (Askrog, 1970).
7. Drug addiction.
8. Suicidal tendencies (Bruce et al, 1974).
9. Coronary arterial disease (Bruce et al, 1968).

Methods and Materials

All qualified anaesthesiologists in West Malaysia (36 with postgraduate Fellowships in Anaesthesiology (see Table 1) were interviewed, personally, by the author and their answers to a questionnaire were recorded. There were 3 females (1 unmarried) and 33 males (1 unmarried). The answers were analysed and are shown under Results.

Table 1

General Data on Anaesthesiologists interviewed

Total number of Anaesthesiologists interviewed	36
Sex:	3 females, 33 males.
Marital status:	34 married, 2 unmarried (1 female, 1 male)
Ages:	38.8 years (average), 28-52 years (range).
Number of years in anaesthetic practice:	10.9 yrs (average) 5-23 yrs (range)

* This paper is a study leave project assisted by a financial grant from the University of Malaya.

Results

The answers to the questionnaire are summarized in Tables 2 and 3 and the various incidences are expressed as percentages. No statistical significance can be derived from the results because of the paucity of numbers, numerous uncontrolled possible influencing factors and the absence of a "control" group.

Table 2
Previous medical history of 36 Anaesthesiologists interviewed

	No.	% incidence
Headaches	26	72.2%
Irritability	25	69.4%
Insomnia	20	55.5%
Spinal problems ("backaches", 3; Prolapsed disc, 1; Cervical/dorsal spondylosis, 2)	6	16.6%
Depression	4	11.1%
Angina/cardiac ischaemia	3	8.3%
Peptic ulcer	3	8.3%
Jaundice	0	
Others (Pulmonary lobar collapse, 2; Right direct inguinal hernia, 1; Retinal tear, 1; Involuntary infertility, 1; Gastritis/pancreatitis, 1).	6	

The high incidences reported on headaches (72.2%), irritability (69.4%) and insomnia (55.5%) were related to usage of inhalational agents (usually halothane), long lists, towards the end of the day or when the anaesthesiologist had been working regularly for 2-3 months without going on leave. All anaesthesiologists who admitted to heahaches, irritability, insomnia, felt that when they used the high-flow, spontaneous respiration technique ($N_2O/O_2/$ Halothane, Magill circuit) more, the chances of going home irritable with a headache and developing insomnia were greater.

Table 3 (obstetric history) revealed an incidence of 15.8% spontaneous abortions out of 82 pregnancies (2 married female anaesthesiologists and 32 wives of anaesthesiologists) after commencement of anaesthetic practice. The 13 spontaneous abortions occurred only among the wives of anaesthesiologists in 79 pregnancies (16.5%). There was no incidence of spontaneous abortions in pregnancies before commencement of anaesthetic practice. The 2 married female anaesthesiologists had no pregnancies before and a total of 3 pregnancies after commencing anaesthetic practice without any incidence of spontaneous abortions. Sex of children revealed an incidence of 42.8% females before, compared to 52.2% females after commencement of anaesthetic practice.

Regarding scavenging or venting systems, 9 out of the 36 (25%) interviewed have started some improvised wall suction system on the expiratory port recently (1-2 years).

Since the number is so small (2 married female anaesthesiologists) compared to the number of wives of anaesthesiologists (32) it is not possible to draw any significance between the two groups. But taking the groups as a whole, the incidence of spontaneous abortions (13 out of 82 pregnancies after starting anaesthesia and 0 out of 14 before anaesthesia) makes interesting reading.

Discussion

The Anaesthesiologist is subjected to long hours of work, frequently without adequate meals and periods of rest; the tension and stress of work in an operating theatre, coupled with the possible effects of theatre air pollution by anaesthetic agents, poor ventilation and being away from daylight for long periods can obviously lead to hazards to health. Radiation exposure can also occur from radiological procedures conducted on patients undergoing general anaesthesia.

Administration of inhalational general anaesthesia, as practised over the years, allows for the patient's expiratory gases to be vented into the atmosphere of the operating theatre room. This

Table 3

Obstetric hisory (2 married female Anaesthesiologists, 32 wives of Anaesthesiologists)

	No. of Pregnancies	Spontaneous Abortions	Congenital Abnormalities	Live Births	Males	Sex Females
Pre-anaesthetic practice	14	0	0	14	8 (57.1%)	6 (42.8%)
Post-anaesthetic practice	82	13 (15.8%)	0	69 (84.1%)	33 (47.8%)	36 (52.2%)

leads to pollution which depends on the efficiency of theatre ventilation, the composition and concentration of the inspired gases, the minute volume vented and the duration of anaesthesia. The greatest pollution is around the expiratory valves. Average levels of contamination have been quoted as 15 parts per million (0.0015%) for halothane and 170 p.p.m. for nitrous oxide (Pfaffli et al., 1972). Operating theatre personnel, in poorly ventilated rooms, accumulate inhalational drugs in their tissues and slowly release them (Gostomzyk et al., 1973); this phenomenon can also occur in recovery room areas (Yanagida et al, 1974; Pfaffli et al, 1972). Repeated exposure to halothane can lead to induction of liver microsomal enzyme systems which eventually leads to bromide ion accumulation. Bromide ions are eventually slowly excreted via the skin and kidneys and, when an accumulation occurs, thought processes can be impaired. Herein lies an obvious danger whereby a tired, overworked anaesthesiologist, with cerebration slowed down due to chronic exposure to a polluted environment, might make mistakes in management of cases.

Generally speaking, notwithstanding the small numbers involved, Malaysian Anaesthesiologists exhibit incidences of morbidities associated with theatre work (see Tables 2 and 3) comparable with those reported amongst groups in other countries.

The incidence of 6 anaesthesiologists (16.6%) reporting spinal problems (see Table 2) raises an interesting problem not generally mentioned or discussed in other investigations. 5 of these 6 are in Private Anaesthetic Practice. Thus, out of 13 "Private Anaesthetists," 5 (38.5%) have complained of "spinal problems." Possibly in private practice the anaesthesiologist is more involved in carrying patients (in smaller private surgical and/or obstetric clinics, besides helping to transport patients to and from the operating table, the anaesthesiologist often helps in carrying the patient back to the ward bed following anaesthesia). One anaesthesiologist developed a Right Direct Inguinal Hernia after 5 years of Private Practice Anaesthesia and 1 Anaesthesiologist in Private Practice developed a Retinal Tear. Both these cases raise the possibility that the sudden jerks and strains involved in carrying patients might have been incriminating factors (sudden rises in intra-abdominal and intraocular pressures, respectively). There were no incidences of jaundice and drug addiction. One Anaesthesiologist developed malaise, lethargy and right hypochondral discomfort/pain whenever halothane was used; the use of halothane has subsequently been limited. The query is whether an abnormal reaction to inhalation of traces of halothane is the cause.

Based on available literature of other work and on the revelations of this retrospective survey, the following recommendations are put forth:

Recommendations:

1. Anaesthesiologists should have adequate and regular periods for meals and rest during work. Possibly, at the end of not more than every 2-month period vacation leave, should be taken. This recommendation should lessen irritability, headaches, lethargy, etc. and make the anaesthesiologist less prone to mental fatigue, resulting in maximum patient-safety. Less prolonged exposure to inhalational agents in the theatre air might also lessen the obstetric problems (Spence, 1973).

2. Operating theatre ventilation should be efficient. Current-day recommendations are that operating rooms should be air-conditioned with non-recirculating systems capable of providing minimal total air-exchange rates of at least 10 times per hour (Witcher et al, 1971).

3. Scavenging systems are recommended in operating theatres because it has been conclusively shown that operating theatre personnel are exposed to inadvertent trace concentrations of anaesthetic agents (Witcher et al 1971; Linde and Bruce, 1969); the theoretical potential hazards of this pollution justify the aim to reduce such contamination as much as possible. High-flow anaesthetic systems, e.g. the spontaneous respiration technique using N_2O/O_2/ Halothane, can lead to more pollution of the theatre air compared to the lower-flow techniques. Wall-suction equipment can be used but has its disadvantages (might be required intermittently for patient-care; maximum wall suction pressure might be transferred directly to the patient's lungs depending on the arrangement of the system). The ideal is a closed system venting of all gases to the outside through the use of appropriately designed scavenging equipment. Scavenging systems can vary from simple designs (Price and McKeever, 1970; Corbett, 1969) to more sophisticated units (Yeakel 1970; Marrese, 1969). All systems have common objectives: attachment to the expiratory valve of anaesthetic machines, protection of patient from positive and negative pressure swings.

Activated charcoal in cannisters, close to the expiratory ports of anaesthetic circuits, is also recommended (Murrin, 1975); this is not effective regarding nitrous oxide but effectively absorbs halothane.

In Malaysia, certain areas where ventilation in operating theatres might not be efficient, the high flow anaesthetic techniques should be avoided whenever possible.

4. Dosimeters should be carried by anaesthesiologists who are frequently exposed to radiation from radiological procedures on patients under anaesthesia (Jenkins, 1973).

5. The carrying of patients who come for anaesthesia and surgery should be a combined team effort: the surgical team must join the anaesthesiologist with the aid of other operating theatre personnel in this necessary task. Quite often, in Malaysia (as in many other countries), at the end of the operative procedure the anaesthesiologist is abandoned by the surgical team and is left with the nursing staff to transport the patient off the table. Chivalry can lead to backaches! It is important for the anaesthesiologist to take charge and protect the patient's head and neck, in particular, as he or she is being transported while in the throes of residual anaesthesia. This care requires the anaesthesiologist's expertise in upper airway care, etc. The basic manual effort for carrying and transporting patients does not require the expertise of an anaesthesiologist. Team work is the essence of operating theatre work and the transportation of patients within this area should come under the ambit of essential team work.

Summary

Qualified anaesthesiologists (numbering 36) in West Malaysia were personally interviewed to ascertain any incidences of claimed hazards to anaesthesiologists.

High incidences of headaches (72.2%), irritability (69.4%) and insomnia (55.5%) were recorded. Out of 82 pregnancies (after commencing anaesthetic practice) 13 ended in spontaneous abortion (15.8%) compared to 0 incidence of spontaneous abortion out of 14 pregnancies (before commencing anaesthesia) in 2 female anaesthesiologists and 32 wives of anaesthesiologists. 6 anaesthesiologists (16.6%) developed "spinal problems".

Recommendations attempting to lessen the hazards are listed.

Acknowledgements

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Emergency Surgery for Bleeding Peptic Ulcer and Erosive Gastritis – A Study of 124 Cases

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Summary

THIS IS a review of the immediate results of emergency surgery for medically uncontrollable bleeding peptic ulcer and erosive gastritis in 124 patients. A high prevalence occurs in the Chinese compared with the other racial groups. Gastric resection carried a acceptable mortality of 2.8% for gastric ulcer and 9% for erosive gastritis. For duodenal ulcer, gastric resection had a mortality of 14%, higher than the 10% with vagotomy and suture ligation. The frequency of rebleeding was however higher with vagotomy. Although these results were not statistically significant, better overall results might be expected if gastric resection is limited to good risk patients with bleeding duodenal ulcer.

Although bleeding peptic ulcer and erosive gastritis occur commonly there has as yet been no review of the problem in this country. A report of our experience might thus be of some value in establishing the prevalence of the different types of ulcers and erosive gastritis in relation to age, sex and racial groups as well as their clinical presentation. The factors affecting mortality are also analysed; in particular, an attempt has been made to define more clearly the choice of surgical procedure in the treatment of bleeding ulcer and gastritis, which has remained a controversial problem.

Methods and Materials

Since the inception of the University Hospital, it has been our policy to admit and treat all cases of upper gastrointestinal bleeding directly into the surgical wards thus avoiding undue delay in surgical intervention. This report covers the five year period from January 1968 to December 1972, during which a total of 562 patients with upper gastrointestinal bleeding were treated. Initial treatment consisted of continuous nasogastric suction and intravenous administration of crystalloid solutions. Whole blood was transfused when shed blood exceeded one litre in volume or when the systolic blood pressure fell to 90 mmHg. Diagnosis of bleeding peptic ulcer or erosive gastritis was usually made clinically. Barium studies were performed when there was uncertainty as to the cause of the haemorrhage. Attempts at gastroscopy during massive bleeding proved frustrating and was performed only after bleeding subsided.

Emergency laparotomy was carried out on 124 patients with peptic ulcer or erosive gastritis in whom the bleeding was massive (i.e. fall of systolic blood pressure to 90 mmHg) or was continual and recurrent after 24 hours, and in the presence of one of the following factors:– (1) Age over 40, (2) a proven history or barium diagnosis of peptic ulcer, (3) previous haemorrhage, (4) shortage of blood.

Results

The 124 patients consisted of 63 cases of duodenal ulcer, 41 of gastric ulcer, 16 of erosive gastritis and 4 of recurrent and stomal ulcer (Table I).

1. Age (Table II)

The age range, and mean age (50 ± 1) were similar in patients with duodenal and gastric ulcer and in erosive gastritis.

Table I

Diagnosis, Type of Operation and Mortality in 124 Patients with Bleeding Peptic Ulcer and Erosive Gastritis

Diagnosis	Total No. of Patients	Resection	Vagotomy & Drainage	Suture of Ulcer	Laparatomy only
Duodenal Ulcer	63(8)	43(6)	20(2)	–	–
Gastric Ulcer	41(3)	36(1)	3	2(2)	–
Erosive Gastritis	16(2)	11(1)	3	–	2(1)
Recurrent & Stomal Ulcer	4	2	2	–	–

Figures in parenthesis indicates number of deaths.

Table II

Age in 124 Patients with Bleeding Peptic Ulcer and Erosive Gastritis

Diagnosis	Total No. of Patients	Age Range	Mean Age
Duodenal Ulcer	63	17–80	49
Gastric Ulcer	41	17–77	51
Erosive Gastritis	16	15–78	49
Recurrent & Stomal Ulcer	4	33–57	48.5

2. Race and Sex (Table III)

There was a predominance of Chinese patients, 113 cases, 91%, far in excess of their hospital utilisation, 55%; $P < 0.5$. In contrast, the Malays, Indians, Pakistanis and Ceylonese formed a much smaller proportion of patients, 8% in comparison with their hospital utilisation, 41%. Males were five times more commonly affected than females.

3. History of Dyspepsia

Two thirds of patients had ulcer symptoms and in more than half of these exceeded five years. Half the patients with erosive gastritis had varying periods of dyspepsia.

4. Previous Haemorrhage

One third of the patients had one or more episodes of previous haemorrhage.

5. Clinical Presentation

Malaena was the commonest presentation, 108 cases, 87%; haematemesis occurred in 75 cases, 60%. Shock, with blood pressure 90/60 mmHg and below, was present on admission in 20 patients

Table III

Analysis of Bleeding Peptic Ulcer @ Erosive Gastritis by Race and Sex and in relation to Hospital Utilisation

	Chinese		Indians Pakistanis Ceylonese		Malays		Others		All Races		Total
	M	F	M	F	M	F	M	F	M	F	
Duodenal Ulcer	47	10	4	–	1	–	1	–	53	10	63
Gastric Ulcer	30	8	2	–	1	–	–	–	33	8	41
Erosive Gastritis	11	3	–	–	2	–	–	–	13	3	16
Recurrent & Stomal Ulcer	4	–	–	–	–	–	–	–	4	–	4
Total	113		6		4		1		124		124
Percentage	91		4.8		3.2		1				
Hospital Admission (1969/1970) percentage	55		26		15		4				

Male:Female ratio = 5:1

while in another 16 patients shock developed as a result of continued or recurrent haemorrhage in the wards. On admission the haemoglobin exceeded 11 gm. in 34 patients, and was 9 to 11 gm. in 26 patients. In 64 cases, 51.6%, the haemoglobin was 3.2 to 9 gm., suggestive of massive haemorrhage prior to admission. In another 12 patients the haemoglobin fell to below 9 gm. as a result of further bleed and inspite of blood transfusion. The total blood transfusion per patient averaged 7.5 units.

6. **Ulcerogenic Drugs**

A history of ingestion of known ulcerogenic drugs was obtained in 10 patients (Salicylates, 9; Corticosteroids, 1). Several other patients had taken various "Chinese medicine", and some of these might contain salicylates. Of the 16 patients with erosive gastritis, one had taken aspirin and another two "Chinese medicine."

7. **Barium Meal**

In 13 patients a barium meal had been done prior to haemorrhage. In 20 patients emergency barium studies were done and in 15 of these the lesion localised was confirmed at operation. We have performed barium studies more frequently in the later part of the series and have found it to be a valuable diagnostic aid.

8. **Laparotomy**

In 56 patients, 45.2%, surgery was performed within 24 hours of admission because of massive haemorrhage. Continued or recurrent haemorrhage necessitated surgery for 68 patients 54.8% over a one to seven day period.

In all cases the stomach and duodenum were examined by a gastroduodenostomy. The lesions found and operations performed are summarized in Table I. Resections were generally performed, but because of individual preference vagotomy or drainage procedures were also done.

9. **Postoperative Complications and Mortality (Table I)**

There were 13 deaths in the whole series of 124 cases, a mortality rate of 10.5%. The mortality rate was 12.5% in both duodenal ulcer (8 deaths in 63 cases), and erosive gastritis (2 deaths in 16 cases). In gastric ulcer it was 7.5% (3 deaths in 41 cases).

a) **Effect of Age**

The mean age of the 13 patients who died was 61, a decade higher than the average of 49 for the whole series. No death occurred below the age of 40.

b) **Effect of Systemic Disease**

There was no death in the 56 patients without systemic disease, the 13 deaths being confined to the 68 patients with systemic disease. Severe systemic disease was directly responsible for three deaths (cardiopulmonary 2, diabetic coma 1) and formed important contributary causes of death in the other 10. Stress ulcers caused death in four patients.

c) **Effect of Operative Procedure**

i) *Bleeding Duodenal Ulcer*

The incidence of recurrent bleeding, 5 in 20 cases, 25% was higher following suture ligation with vagotomy and drainage than following gastric resection 7 in 43 cases, 16.3%. Leakage however occurred more frequently with gastric resection, 5 in 43 cases, 11.6% compared with vagotomy and drainage, 1 in 20 cases, 5%. The operative mortality, 6 in 43 cases, 14% was also higher with gastric resection than after vagotomy and drainage, 2 in 20 cases, 10%. The two groups of patients treated by resection and vagotomy with drainage were comparable in age and degree of haemorrhage, though a relatively greater proportion of patients with systemic disease, 12 of 20 cases, 60% were treated by vagotomy and drainage than by gastric resection, 17 of 43 cases, 40%. Although differences exist in operative mortality and complications between gastric resection and vagotomy, the differences were not statistically significant.

ii) *Gastric Ulcer*

There were three deaths in 41 cases, a mortality rate of 7.5%. 36 patients were treated by gastrectomy with one fatality, 2.8%. Vagotomy with drainage and suture ligation was performed on three patients without mortality. In the early part of the study period, two patients with severe systemic disease (Cardiapulmonary, liver failure) were treated by suture ligation without vagotomy. Both had recurrent haemorrhage but subsequent gastrectomy did not prevent mortality. One other patient bled after gastrectomy but improved with blood transfusion.

iii) *Erosive Gastritis*

There were 16 cases with two deaths, a mortality rate of 12.5%. 11 patients had gastric resection with one death, and two instances of recurrent haemorrhage. Three patients underwent vagotomy and drainage with one recurrent bleed and no mortality. The second death was due to cardiac arrest on the table before definitive surgery.

iv) *Recurrent and Stomal Ulcer*

Vagotomy (with revision gastrectomy in 2 cases) was performed on four patients without operative mortality.

Discussion

There is greater frequency of bleeding duodenal ulcer compared with gastric ulcer (1.5: 1). This is in keeping with earlier reports by Sreenevasan (1966) of 685 radiologically proven peptic ulcers and Ti and Yong (1973) of 73 perforated peptic ulcers. Erosive gastritis form 12.8% of our series, being of the same order of frequency, 10%, as reported by Desmond and Reynolds (1972).

The low prevalence of bleeding peptic ulcer in the Malays, Indians, Pakistanis and Ceylonese and the predominence in the Chinese is striking. This strongly related racial prevalence has been reported in radiological proven peptic ulcer (Sreenevasan, 1966) and in peptic ulcer perforation (Alhady, 1965; Sreenevasan, 1966; Ti and Yong, 1973). No satisfactory explanation has yet been given for this racial difference. The socioeconomic and cultural background and dietary habits differ widely in these racial groups. Alhady and Kandiah (1967) reported that there is no difference in maximal acid output in normal controls amongst the three major races but the number of subjects studied were few.

The mortality of our series compares favourably with others and we believe that this is at least due in part to our policy of direct admission, observation and treatment in the surgical wards so that there is no undue delay in surgical treatment.

The low incidence of complications and operative mortality, 2.8% following resection for bleeding gastric ulcer seems to justify it as the best procedure for the treatment of this condition. Erosive gastritis had also been treated with an acceptable mortality of 9% by gastrectomy and this would confirm Desmond and Reynold's (1972) assertion that gastrectomy is the procedure of choice for the treatment of these difficult cases.

Our experience indicate that the operative mortality of 12.7% in bleeding duodenal ulcer might possibly be reduced by a more selective policy in the choice of operative procedure. In good risk patients, resection may be done safely, being the surest way to control haemorrhage. The elderly patient with severe systemic disease and bleeding duodenal ulcer are particularly difficult problems. A policy of strictly performing only conservative surgery (vagotomy with drainage and suture ligation) might reduce the high operative mortality in these poor risk patients.

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Epidemic Hysteria in a Malaysian Chinese Extended Family*

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Summary

An only recorded epidemic hysteria affecting a Chinese extended family over a **13** *days period occurred in four nuclear families staying in a rural squatter area seven miles from Kuala Lumpur. Data were collected during personal interviews, home visits, field trips and hospitalization of two of the siblings.*

On the first night, during a religious ceremony for a sister-in-law who died during puerperium, a brother ran out and screamed that evil spirits were chasing him. By the third day, five siblings and a brother-in-law were involved. A brother was brought to a general practitioner on the fifth night. While the active managements of a bomoh and some spirit mediums were going on the sixth day, friends felt restraint to accept an offer to hospitalize a brother for psychiatric treatment. This brother was subsequently brought for hospitalization on the thirteenth day while another brother was hospitalized on the eighth day.

Lay and psychiatric diagnoses and management in a Malaysian socio-cultural background were discussed.

Introduction

EPIDEMIC HYSTERIA occurred among Malaysian (1, 2), English (3) and Japanese (4) school girls. All accounts of epidemic hysteria show that symptoms occur within a unified group against a background of fear and ignorance, and are triggered off by some particular event (5). With the closely-knitted traditional extended family, one may expect epidemic hysteria to occur among its members. Survey of literature and enquiry among local populations revealed only one recorded case among a Malaysian Indian family (6) and there was no discussion of its occurrence among members of extended families.

Aims of this study

To understand an outbreak of epidemic hysteria in an extended family and to study the lay, indigenous therapeutic approach and psychiatric management.

Methodology

A local Chinese newspaper appealed for help on behalf of an extended family in which six members were affected by "Hsieh-ping" (7), a Chinese term which meant possession by evil spirits. The author decided to study this outbreak by personal interviews (of the affected individuals, relatives, friends, bomohs and spirit mediums), home visits, field trips and where appropriate facilitating admission to and undertaking management in a hospital. He identified himself as a University Hospital psychiatrist who had responded to the appeal for help, but requested anonymity for professional reasons. Cantonese was the language used throughout the contacts except in dialogue with two youths and a reporter from the Chinese newspaper, when Mandarin was used.

Setting

The mass hysteria occurred in an extended Chinese family staying in a squatter area occupying an old mining land, seven miles from Kuala Lumpur. There are numerous shrines and temples in the area.

*An abridged version of this paper was presented at the 9th Malaysia-Singapore Congress of Medicine, September 1974.

Findings

The three brothers, two sisters and a brother-in-law who were affected stayed on the same side of a main road connecting Sungei Besi and Serdang. The deceased sister-in-law stayed across the main road. Three of the houses, where Y.S., S.K. and the couple A.I. and B.H. stayed, adjoined each other. Y.W. and A.K. stayed with their aged parents about a hundred yards away. None of these houses had tap water and electric supply.

Figure 1 shows the composition of the extended family and members who were involved in the epidemic hysteria.

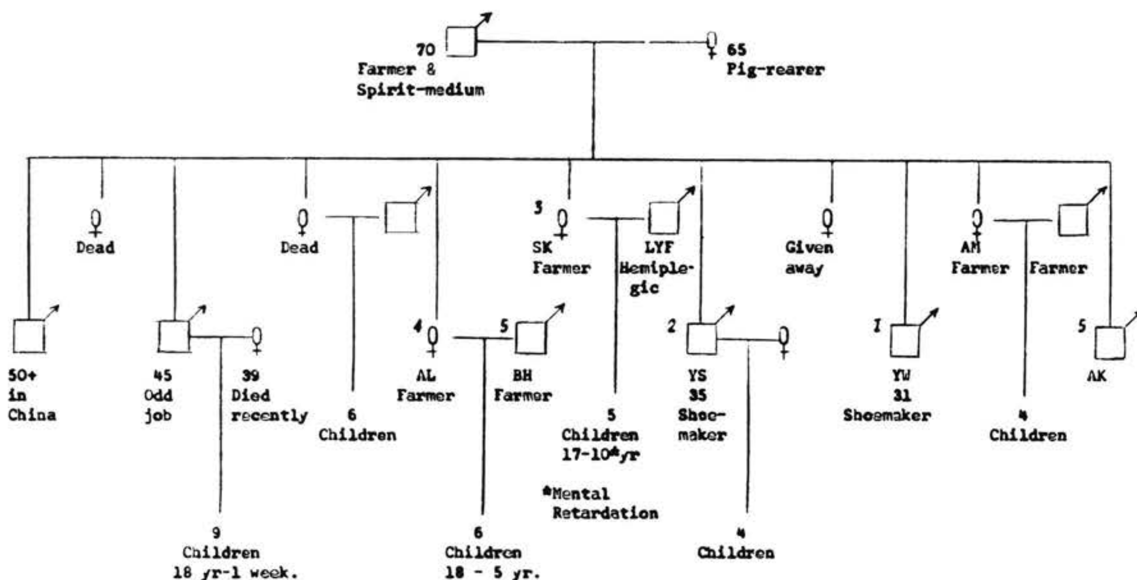
Chronology of the epidemic hysteria

On the first night, 18/5/74, during a religious ceremony for a sister-in-law who died during puerperium, Y.W. ran about four hundred yards, across a main road, along an unlit mud-path lined by wooden houses, back to his home – screaming that evil spirits were chasing him. The previous night, he had gone in a trance voluntarily, praying for his sister-in-law's recovery. At home was his father, a 70-year old, agitated man with a slurring speech and hemi-paresis, resulting from a stroke two months ago. He was concerned that his own death was impending, especially after his daughter-in-law's death.

On the second night, he put on his red sash, which he wore whenever he went into a trance for diagnosis and healing of illness. He induced a trance, praying that Y.W. took over his job as a spirit-medium. He claimed that both his sons, Y.W. and Y.S. were possessed by his Gods. He contributed to the tension during epidemic hysteri but was not counted among the subsequent total of six people who were involved in the epidemic hysteria because of his voluntary induction of trance.

On the third day, S.K. was affected. A.L. went into a brief trance when she consulted a 60-year old woman spirit-medium, K.C. A.K. and B.H. while trying to calm down Y.W., became agitated. B.H. accused another brother-in-law, L.Y.F. of trying to choke him. Both A.K. and B.H. rushed out of the house, shouting that devils were chasing them. They ran to a nearby village to seek the help of the spirit-medium, K.C. at 2 a.m. K.C. spoke the same dialect, Kao Chow, a variant of Cantonese.

Figure 1: An Extended Family Involved in Mass Hysteria



1, 2, 3, 4 and 5: Numeral referred to the sequence of involvement in the Mass Hysteria.

On the fourth day, in three separate nearby houses, Y.W., Y.S. and S.K. had periodic outbursts of excitement and tried to run out of their houses. Friends helped to restraint them. Relatives, either on the instructions of spirit-mediums or their own decisions, stayed away.

On the fifth day, Y.S. was very agitated. He rushed out of the house, climbed up a 30-foot pine tree. His friends managed to get a guni sack and four of them stood on a table, trying to break his fall when he jumped down. Y.S. landed on his heel, crashed on the wooden table, breaking it. He sustained some bruises when he dropped past some branches. In a nearby house, S.K. was screaming away. She strangulated a pet cat of her husband. About 100 yards away in his father's house, Y.W. was gesticulating and muttering. Relatives and friends had brought spirit-mediums to perform healing ceremonies without any success. A local reporter was again requested to appeal for help.

On the sixth morning, a popular Chinese paper in the Kuala Lumpur, Petaling Jaya area headlined in bold red prints the plight of this extended family. Appeals were specifically directed to spirit-mediums, bomohs and Taoist priests to give free aid to this family who had spent considerably amount of money in seeking treatment (8). By 10.00 a.m., a crowd of about twenty people were gathering in front of K.C. a spirit-medium's house about one mile away where three siblings were transported there early in the morning. The following were the conditions of the three people who were still having periodic trances:-

Y.W. was gesticulating and talking distinctly. He said that he was a leper. In response to a spirit medium's assertion that he was not a leper, he was proud and confident in reasserting that he was a leper. He was not hyperventilating. He followed my instructions to lie down flat for a physical examination. But shortly afterwards he rushed out of the room and had to be carried back.

Y.S. was sitting silently with his head bent – as if in a depressive stupor. He was not hyperventilating. Suddenly, he got up and rushed to the door. He too was restrained by his friends.

S.K. was hyperventilating (respiratory rate 40/min.), lying with her extremeties flexed, having marked carpo-pedal spasm. She responded to questions and admitted that there was numbness and tingling sensation of the extremeties. On request, she breathed slower and deeper.

When I returned to the house after a discussion with the only village general practitioner who had treated Y.S. the previous night, a bomoh was conducting his diagnostic and healing ritual, three spirit-mediums were waiting to offer their services. When I proposed to give an intramuscular injection to Y.W., the initiator of this epidemic hysteria, a spirit-medium said loudly that Y.W. should not be sedated, otherwise he would die. A spokesman for the friends expressed their appreciation for the offer of help, but decided not to hospitalize Y.W. then.

On the seventh day, friends of the affected siblings took them back to their respective homes on the aged spirit-medium's request. She and her husband felt that they were unable to cope with the brother's occasional violent outburst. They scratched others and broke a few chairs while struggling from physical restraint.

By evening Y.W. had attracted a crowd of about forty people in his house. He sat down calmly in the hall near the altar of his deity. Y.S. still had occasional attacks. S.K. had recovered.

On the eighth evening, a friend who recognized the author as he was on his way to visit Y.W. asked for a referral to University Hospital. The father had refused to allow his sons to be hospitalized but Y.S.'s wife had decided to ask his friends to bring him to hospital. A spirit-medium from Malacca had informed the family that his pulse was weak and he needed hospitalization. Y.S. was hospitalized on the same night.

On the ninth day, a sign stating: "Thanks but unable to entertain any visitors" was put up about 10 yards away from Y.W.'s house. The father and Y.W. both appeared relaxed. But Y.S. continued to have periodic trances until his hospitalization, with his father's consent, on the 13th day. During a trance state, he had climbed up a neighbour's roof and swam in a water-storage tank in his house.

Lay Concept and Management

Spirit-mediums, bomohs (Malay medicine-men who frequently seek the help of spirits) and some local inhabitants with traditional view-points believed that the victims had offended or accidentally crossed the path of some spirits. A spirit-medium's husband said that the father must have done some things evil in his youth, so the punishments were meted out to his children. Spirit possession is known locally and in Taiwan as Hsieh-ping (7).

A bomoh chanted some prayers and prescribed rituals such as bathing with "jampi" (magic) water and squeezing of lime on the head. A spirit-medium gave a talisman, consisting of magico-religious symbol on a yellow paper. The ash then was to be

burnt and stirred in water, then later to be drunk as "medicine". These therapeutic acts were conducted in public. A brother-in-law, L.Y.F. attributed his wife's improvement to drinking of "medicine" and carrying of a talisman. This was a Chinese paper fan with some cryptic Chinese characters on it.

Psychiatric Diagnoses and Management

The following family and individual psychodynamics emerged:

Members of this extended family were closely knit. Mutual financial and physical help occurred. But there was hardly any open conversation among the siblings or parents.

About two months before the death of the sister-in-law triggered off this epidemic hysteria, the aged father nearly died from a stroke. But none of the family members talked about the reality of the impending death of the father or discussed the major issue of carrying on of the father's role as a spirit-medium, so that some one would feed the spirits of the Eight-sided Grand Lord; otherwise misfortune might then descend on the whole of the Y family.

Except for a sister A.M., all the other siblings, had an altar for their patron God, the Eight-sided Grand Lord. This is a rather rare patron God in Malaysia. The parents conversed with their children in Kao-Chow, a minority linguistic group among the predominantly Cantonese and Hakka community.

All affected members had the diagnoses of hysterical dissociative reaction.

(a) *Y.W.*

He showed the following psychiatric symptoms during his hospitalization:- occasional ideas of reference (he felt that other patients laughed at him, talked about him), auditory hallucination of a derogatory nature ("He said that I went to prostitute" and "He said that I took a male pig along") and paranoid ideation ("They wanted to catch me and harm me"). Six years ago, the patient had a history of loss of consciousness in a motor-cycle accident which resulted in the death of the pillion rider, a friend. He felt guilty about his death. Within a month of the accident, one of his sisters died, the death vaguely attributed to the delayed effects of child birth. The last 2-3 years he had repeatedly told one of his sisters that villagers ridiculed him for being a son of a pig-rearer. The secondary diagnosis of paranoid schizophrenia was made.

Specific management during his seventeen days of hospitalization included use of a phenothiazine, chloropromazine, 50 mg. to 150 mg., three times a day. Four treatments with electro-convulsive therapy on alternate days were given after a sudden episode of nearly homicidal excitement during his acute paranoid state.

Supportive psychotherapy involved working through his current grief over his sister-in-law's death and his delayed pathological grief (9) of his sister and a friend, two brief sessions with his brother. Y.S. and two sessions with his girl-friend.

(b) *Y.S.*

During the night of his admission, while his abdomen was palpated, he exclaimed, "Don't touch! Be careful. There are several (children) still inside." In the early morning, he came very agitated. Intramuscular injection of Diazepam 10 mg., followed half an hour later by 100 mg. of chloropromazine, had to be given. He developed slight hypotension and slept nearly for thirty hours, waking up to take some fluid. During his recovery, he denied any belief in spirit possession. He was aware of his worries over his sister-in-law's death and how busy he was with the funeral. He was depressed over his inability to give financial aid to his brother. He had complete amnesia of his behaviour during his trances. His secondary diagnosis was reactive depression.

During his eight days of hospitalization, an anti-depressant, Imipramine, 25 mg. tid. was prescribed when he became ambulatory. He, and his brother, Y.W. although seeing each other in the same ward, did not talk to each other.

Psycho-therapeutic management included discussion of his personal conflicts individually, and during joint-sessions with his wife. Family planning was discussed. During two joint-sessions with his brother, Y.W., both of them cried when the death of the sister-in-law and their feelings of helplessness, financially and emotionally, were discussed.

(c) *S.K.*

S.K. was the only one who hyperventilated during this epidemic hysteria. She gave vivid descriptions of how the devils possessed her. During her dissociated state, she abreacted a great deal of her intrapsychic conflict. The cat which she strangulated was a pet of her husband. Her marital relationship and financial situation had further deteriorated after the gradual onset of her husband's right hemiparesis one and a half years ago. He had applied for a visa to China for medical treatment – with contributions from relatives and friends. Her youngest, ten year old boy was mentally retarded following a febrile illness at one and a half year old.

(d) *A.K., B.H. and A.L.*

A.K. the single, tractor-driver who came home infrequently and B.H., a brother-in-law were briefly affected. They had acute anxiety panic while trying to calm down Y.W. B.H. admitted that he was very frightened and denied that the devils possessed him. A.L.'s brief trance is not unusual among clients who consult spirit-mediums. Occasionally, the client goes into a trance. A.H. and B.H. are spouses and their marital relationship and financial conditions were satisfactory.

Discussion

Local lay concepts and management of this epidemic hysteria ranges from the traditional to the seeking of modern approaches – representing a society in transition. Taib Osman (10) discussed how it was possible for a Malay patient to seek both traditional medical spiritual healing by bomoh and modern therapy. Some Malaysian Chinese behave similarly – seeking help from spirit mediums, bomohs and doctors. Many of these local healers may achieve significant therapeutic results, (11, 12, 13). For neurosis, situational reactions or crises in interpersonal reactions or changes in life, the local magico-religious healing may be useful and more economic (13).

When patients, occasionally 'referred' by the native healers themselves, come for modern management, physical aetiology or complications need to be assessed. The accepted International Classification of Disease (14) is individual – orientated and took little recognition of group and socio-cultural influences on psychiatric conditions. Numerous authors, for example, Kiev (15) and Yap (16) discussed the influence of culture on manifestations and management of psychiatric symptoms. Both the patients could have been classified as culture-bound reactive syndrome with disturbance of consciousness, spirit-possession type (16). Spirit-possession, in a community that believes in the supernatural, provides safety valve for the abreaction of conflicts without fear of been stigmatized as mentally sick. All of the six members involved in the epidemic hysteria were reacting to intrapsychic and interpersonal stresses. Two of them required intensive treatment during their psychic decompensation.

Awareness of the tendency for initial trials with indigenous therapy will help to establish rapport with the patients. Knowledge of the psychodynamic and social factors involved in these cases will contribute to effective supportive management of these cases in addition to the use of appropriate physical therapy.

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Is Routine Stool Examination of Food Handlers Worthwhile?

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THE VALUE OF routine stool examinations of food handlers for exclusion of enteropathogenic bacteria has been questioned (Howie, 1970). As this division still receives a fair number of specimens for this purpose it was considered useful to analyse the results of such examinations and to review the pros and cons for performing such tests.

Materials and Methods:

Rectal swabs from 1,425 food handlers from various parts of Malaysia were submitted for bacteriological study. All the specimens were sent in Selenite F transport medium. On arrival at the laboratory, samples were incubated overnight at 37°C and subcultured on to DCA and MacConkey plates. Following incubation at 37°C for 18 hours these were examined for non lactose fermenters. Such colonies were inoculated into Russels Triple Sugar Slopes. Colonies giving reactions suggestive of Salmonella were subjected to a full range of biochemical tests and serotyped first with polyvalent sera and if possible with specific antisera.

Results:

Salmonellae was isolated from 14 out of the 1,425 specimens, giving a isolation rate of 0.98%. 9 different *Salmonella* serotypes were encountered: *S. bareilly* (2), *S. nchanga* (1), *S. derby* (3), *S. seftenberg* (1), *S. weltevreden* (1), *S. lexington* (2), *S. newport* (1), *S. albany* (1), *S. typhimurium* (2).

Discussion:

As the specimens were sent in Selenite F medium which is highly selective for Salmonellas we were able to isolate the latter only. Had fresh stools been sent other enteropathogens such as Shigellas, enteropathogenic *E. coli,* and *Vibrio parahaemolyticus* may have been isolated. Furthermore fresh stools are more productive than rectal swabs as far as isolation rates are concerned. Taking this into consideration, had fresh stools been taken and a wider variety of transport media been used, we might have obtained a higher rate of isolation than the 0.98% we have shown.

As it stands the isolation rate that we have obtained appears to support the general feeling that routine stool examinations of food handlers is a waste of time (Howie, 1970; Bailey et al, 1972; Bostock, 1974). Salmonella excretion by carriers is usually intermittent and the results of a single examination cannot be interpreted too strictly (Richardson, 1975).

The health control of food handlers was discussed at the World Health Organisation's European Region Seminar on Food Hygiene in Warsaw in 1970 where there was a general feeling that the role of the human carrier in the direct contamination of food has been greatly over emphasised. It was agreed that there is now abundant information that other sources of contamination are of far greater importance. Furthermore in the examination of faecal samples false negative results may be obtained either because the laboratory fails to detect the presence of small numbers of pathogens or because the organisms are not distributed evenly in the faeces. It was also considered that examinations once or twice a year are valueless since pathogens are often carried in the stools for short periods only and the certificate based on such an examination is

valid only on the day on which the sample was taken. Majority of the participants at the Seminar felt that routine examination of the faeces of food handlers is not of sufficient value in the prevention of food-borne disease to warrant the expense and time involved (Bostock, 1974). This does not preclude the value of medical examination including bacteriological examination of stool samples in the investigation of food handlers with a history of gastro-intestinal symptoms or contact with infection. Bostock (1974) feels that the best safeguard against the contamination of food by a human excretor is to place greater emphasis on the education of food handlers in hygiene practices and to report illnesses to management so that the advice of public health authorities can be obtained.

Such practices may be possible in large organisations like hotels and food factories but would be difficult to apply in the Malaysian context where we have to contend with hundreds of hawkers and food vendors. The only time where it would be practicable to subject them to some kind of examination would be when they turn up to obtain or to renew their licences. Asking them at that time whether they had suffered from symptoms of gastroenteritis or have been contacts is hardly likely to produce a reliable response. The only resource then is to subject them to a medical examination including a stool examination and hope that by doing so at least a few carriers may be detected and dealt with. The finding of 14 Salmonella excretors after examining 1,425 food handlers may not seem much and its real implication and usefulness in preventing outbreaks of food poisoning is hard to ascertain. One would also have to decide whether we can bear the cost of such examinations.

I would like to suggest that in the case of big organisations, a pre-employment medical check up including stool examinations, education on hygiene practices and instruction to workers to seek immediate medical attention should they fall ill and to report to the authorities when they have symptom of gastroenteritis or have had contact with patients with gastroenteritis should suffice to safeguard against starting food-borne infections. On the other hand, in the case of individual hawkers and food handlers a stool examination at their time of licensing would provide some kind of a surveillance though one must be fully aware of its limitations. These have already been pointed out above.

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Diabetic Autonomic Neuropathy

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Introduction

DIABETIC AUTONOMIC NEUROPATHY is not uncommon and produces a variety of effects. The importance of recognition of these manifestations is three-fold: firstly, to avoid diagnostic error; secondly, to alleviate patients from symptoms; and thirdly, as a guide to prognosis (Ewing et al, 1976).

The diagnosis of diabetic autonomic neuropathy is usually based on characteristic clinical features and is often unsubstantiated by objective testing of the autonomic nervous system. Tests to establish the presence of autonomic neuropathy are generally complex and not easily performed at the bedside, and are based on the integrity of the vascular reflexes.

The twin objectives of this paper are to review the pattern of diabetic autonomic neuropathy manifestation in the local population, and to present two simple tests of cardiac denervation, which may be performed by any practitioner without the use of any elaborate apparatus.

Patients and Methods

Twenty-seven patients were selected for the study, on the basis of the presence of one or more of the following known manifestations of diabetic autonomic neuropathy:

1. Postural hypotension

   A postural drop of systolic blood pressure of 30 mm Hg and above on changing from lying to standing position, with or without symptoms of faintness, giddiness or vertigo. Patients who had been on hypotensive drugs were excluded.

2. Gastrointestinal disturbances
   - (a) Diarrhoea: Intermittent or nocturnal, with watery stools but no blood or mucus;
   - (b) Gastric fullness with or without nausea and vomiting;
   - (c) Dysphagia.

3. Impotence

   Defined as inability to achieve or sustain full penile erection, without loss of libido.

4. Bladder disturbances

   Urinary retention, incontinence or decreased flow rate in the absence of prostatic enlargement.

5. Sweating abnormalities

   Hyperhidrosis, anhidrosis, nocturnal or gustatory sweating, in the absence of thyroid disorders.

6. Hypoglycaemia unawareness in patients not known to be on beta blocker therapy.

Each case selected was subjected to:

1. A thorough physical examination for evidence of:
   - (a) Peripheral vascular disease; Absent peripheral pulses with or without ischaemic changes of the limbs.
   - (b) Peripheral neuropathy: Loss of ankle jerks with or without sensory impairment. In all male patients, testicular pain was elicited by the method of Campbell I.W. (1974).

(c) Retinopathy: Background, exudative or proliferative.
(d) Pupillary abnormalities.

2. Supine and erect pulse and blood pressure measurement.

3. Urine examination for proteinuria.

4. Intravenous atropine 1.8 mg test, recording the pulse rate every minute for ten minutes.

5. Measurement of heart rate variability.

In the absence of a heart rate monitor, heart rate variability was indirectly measured from an electrocardiograph tracing. The patient was taught to breath in and out as deeply as possible for 30 seconds to enhance sinus arrhythmia. Heart rate was measured by converting R-R interval from the ECG tracing, and heart rate variability was taken as the mean difference between the lowest and highest heart rates during deep breathing.

Results

There were 15 males and 12 females. Their mean age was 56 years (range 16-70 years) and the mean duration of diabetes was 12 years (range 1-30 years). The youngest patient was a 16 year old juvenile diabetic known to be suffering from the disease since the age of ten. Twelve patients were insulin dependent.

The complications of diabetes found in association with autonomic neuropathy in these patients were shown in Table 1.

Table 1

Associated Complications

Peripheral Neuropathy	16 (2 with trophic ulcers)
Peripheral Vascular Disease	4 (1 with below-knee amputation)
Retinopathy	13 (5 background, 6 exudative and 2 proliferative)
Nephropathy	6 (1 with uraemia)

Manifestations of Diabetic Autonomic Neuropathy. (Table 2)

The most common manifestation of diabetic autonomic neuropathy was impotence. All but one of the 15 male patients were impotent, and in six of them it was the sole manifestation of autonomic neuropathy. Only six patients were found to have impaired or absent testicular pain.

Table 2

Manifestations of Diabetic Autonomic Neuropathy

Impotence	14
Sweating Abnormalities	12
Diarrhoea	11
Postural Hypotension	7
Gastric Fullness	4
Bladder Disturbances	2
Hypoglycaemia Unawareness	1

Sweating abnormalities were common (12 patients). The usual complaint was profuse sweating involving face and upper part of body unrelated to exertion or heat. This occurred in eight patients, three of whom also had nocturnal sweating with similar distribution. Gustatory sweating involving face, head and neck occurred in seven patients. No particular food was incriminated in this form of sweating abnormality.

Diarrhoea was present in eleven patients, all of whom gave a history of passing watery stools intermittently, averaging two to three days for each episode. Only two patients had nocturnal diarrhoea.

Seven patients had a postural drop of systolic blood pressure of more than 30 mm Hg. One patient in fact was admitted as a case of idiopathic orthostatic hypotension, but glucose tolerance test showed a frankly diabetic pattern without glycosuria. Two patients, one with a postural drop of 50 mm Hg and the other 30 mm Hg, denied having any symptom of postural hypotension.

Four patients had symptoms ascribed to delayed gastric emptying. One patient, a 55 year old Indian male, developed acute gastric dilatation with aspirate exceeding 1,500 ml per 24 hours four days after cataract surgery under local anaesthesia. He recovered with conservative treatment and potassium replacement.

There were two patients with bladder disturbances. A 53 year old Chinese male who had impotence for seven years and intermittent diarrhoea complained of decreased urine flow rate for last six months, and developed acute retention of urine following intravenous atropine test. The other patient was an elderly female who had to be catheterised repeatedly for a distended bladder.

Hypoglycaemia unawareness was seen in one patient. He was a 59 year old Indian male on chloropropamide 500 mg daily who presented as a case of cerebrovascular accident with slurred speech and right hemiparesis. He was conscious but restless and noisy. Random blood sugar done on admission was 30 mg%. His neurologucal deficit disappeared completely the following day after intravenous dextrose.

Pupillary abnormalities were not seen in this study.

Tests for Cardiac Denervation

All but one patient had intravenous atropine given for cardiac acceleration and ECG done for sinus arrhythmia, the exception being a case with atrial fibrillation. Two patients developed retention of urine after atropine.

The results of intravenous atropine test are shown in Fig. 1. The normal response to intravenous atropine is an increase of heart rate of at least 20 beats per minute (Wheeler and Watkins, 1973). Almost all the patients with subnormal response had a high resting heart rate.

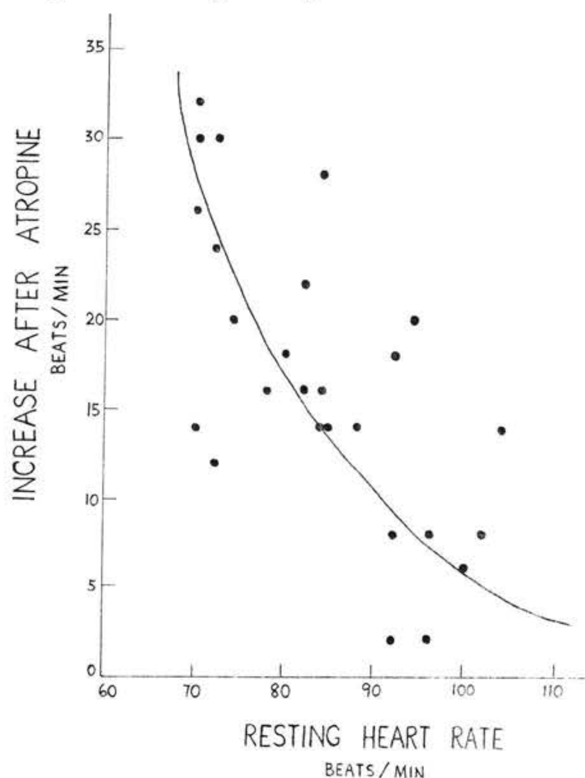

Fig. 1
The response of heart rate to intravenous atropine. The maximum rise in beats/min. is shown in relation to the resting heart rate.

The results of heart rate variability measurements are expressed in Fig. 2 which shows the relationship between heart rate variability and cardioacceleration by atropine. Subnormal increase in beats per min after intravenous atropine was associated with low heart rate variability.

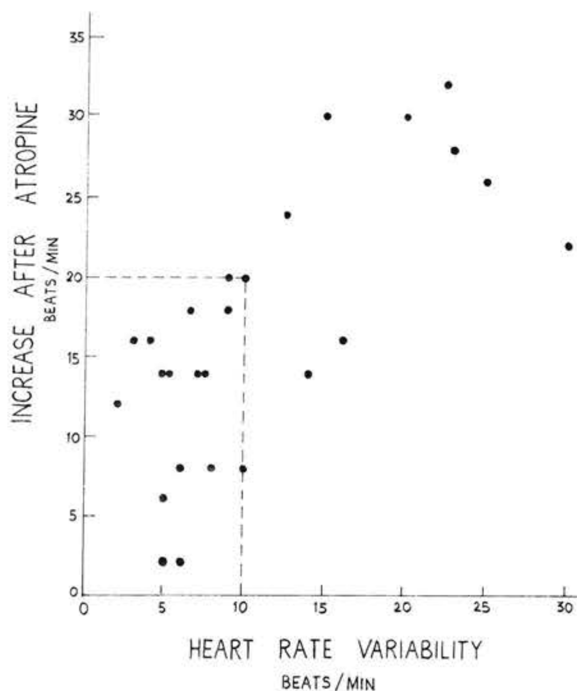

Fig. 2
Heart rate variability. Low heart rate variability is correlated with abnormal response to intravenous atropine, as shown by the dotted lines within which both tests are abnormal.

Discussion

Diabetic patients with autonomic neuropathy are more often associated with the complications of diabetes, particularly peripheral neuropathy, and with insulin dependence.

Impotence occurs in nearly 50% of patients who have had diabetes for over five years. It may be the sole manifestation of diabetes in a previously undiagnosed patient (Mahler and Hayes, 1972). Hence it is important to exclude diabetes in any patient complaining of impotence. Impotence resulting from diabetes may be distinguished from that caused by psychological problems by the presence of other features of autonomic neuropathy, the absence of spontaneous erection and the maintenance of libido.

Absent or diminished testicular sensation is said to correlate well with clinical features of autonomic neuropathy except where impotence occurs alone. Most patients with impotence alone have normal testicular sensation (Campbell et al, 1974). Only six of the 14 patients in this study had impaired or absent testicular sensation. The author has found this test to be of little practical use because of the wide variation in patients' pain threshold and the difficulty of exerting constant pressure in squeezing the testis.

Abnormalities in sweating are common. Spontaneous profuse sweating, worse at night, appears to affect only upper part of the body. Watkin (1973) described gustatory sweating as a new sign of diabetic autonomic neuropathy and found that cheese was the most powerful stimulus. The distribution of sweating is in the territory of superior cervical ganglion, similar to the pattern following cervical sympathectomy. The cause is aberrant nerve regeneration after degeneration from trauma or disease, between fibres of vagus nerve and sympathetic cholinergic sweat fibres at the level of superior cervical ganglion. Anti-cholinergic drugs are effective in abolishing gustatory sweating.

Persistent or episodic watery diarrhoea in diabetic patients represents a now well defined functional disorder best referred to as diabetic diarrhoea (Cecil Lobe, 1971). It is said to be particularly troublesome at night. The diabetes is not always elinically apparent or previously recognised. Its importance lies in the social disability and in the availability of striking benefits from therapy with tetracycline. Recently, Condon et al (1973) described the use of oral cholestyramine in diabetic diarrhoea, a point of similarity to post vagotomy diarrhoea. The other respects where the two conditions resemble are:

1. watery stools, sometimes steatorrhoea
2. disordered small intestine transit
3. gallbladder dysfunction and increased gallstone formation.

Postural hypotension is a prominent and disabling symptom of diabetic autonomic neuropathy. It usually results from a disturbance of the complex vascular reflex control of blood pressure, possibly with a decreased or absent renin secretion in response to the erect posture, and fludrocortisone is said to be of value in controlling this symptom, as found by Campbell et al (1976). In its mildest form, although there is an excessive postural fall in blood pressure, the patient has no symptoms, as in two cases in this study. In its severest form syncope may be sufficiently prolonged to produce convulsions and death from brain-stem anoxia.

Delayed gastric emptying, due to diminished gastric motility may cause bouts of otherwise inexplicable nausea and vomiting. Acute retention of urine results from an atonic bladder, but less severe disturbances such as increased bladder capacity, decreased bladder sensation and urine fow rate may only be shown by cystometry. Lack of warning symptoms of hypoglycaemia, presumably due to sympathetic denervation, is uncommon and was seen in only one patient in this study.

The most widely used test of autonomic function, the response to the valsalva manouvre, has several disadvantages. It is difficult to perform accurately unless arterial catheterisation is undertaken, and may be abnormal in some diabetics without autonomic neuropathy. The response of the heart rate to mental arithmetic, to unexpected noises, and to carotid sinus pressure are easy to measure but erratic even in normal subjects (Brit. Med. J. 1974).

Recently the blood pressure response to sustained hand grip has been proposed as another simple test of autonomic function (Ewing 1973). The test is easy to perform and correlates to some extent with the abnormal valsalva responses, but requires a specialised equipment, a hand grip dynanometer.

Impaired vagal innervation of the heart is evidenced by (Wheeler and Watkins 1973):

1. Persistent resting tachycardia
2. Failure to elicit a tachycardia after intravenous atropine
3. Loss of heart rate variability during deep breathing.

All three observations had been confirmed by this study which also shows that there was good correlation between these tests of cardiac denervation. Thus, patients with high resting heart rate were associated with poor response to atropine and almost all patients with subnormal response to atropine had low heart rate variability. Admittedly, this study had been done without a control group for heart rate response is known to decline with age due to decreased vagal tone. Nevertheless, the results are conclusive of the value of these tests providing simple, quantitative and objective evidence for the presence of autonomic neuropathy.

Summary

Recognition of diabetic autonomic neuropathy is important because the symptoms may cause

diagnostic confusion to the unwary, effective therapeutic measures are available for some of its manifestations and prognostic significance has been attached to it. In order of frequency, the manifestations of diabetic autonomic neuropathy seen in twenty-seven patients in this study were impotence, sweating abnormalities, diarrhoea, postural hypotension, gastric fullness, bladder disturbances and hypoglycaemia unawareness. The response of heart rate to intravenous atropine and heart rate variability as measured from ECG tracings are two simple quantitative tests for cardiac denervation providing objective evidence for the presence of autonomic neuropathy.

Acknowledgement

The author is grateful to Miss Teng Yew Yeng, for the painstaking recording of electrocardiographs used in heart rate variability measurement.

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Gastric Carcinoma – A Review of 114 Cases

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Summary

A CLINICAL REVIEW OF 114 patients with gastric carcinoma shows that the disease is common in the Chinese and rare in the Malays. Most of the patients were diagnosed only when late manifestations of the disease were evident. Early diagnosis would only be possible if barium meal and gastroscopy are performed promptly on patients with epigastric discomfort before physical signs appear. A gastric resection rate of 58% was achieved in this series of late cases. Resection was performed whenever possible, and favoured even if it was only a palliative procedure.

Carcinoma of the stomach though reported to be infrequent in most parts of Asia and Africa (Doll, 1967) is a common cause of death in Malaysia. Despite its frequency, the epidemiology, pathology, clinical presentation, diagnosis, treatment and prognosis of gastric carcinoma in this country have yet to be documented. It is hoped that a clinical review of our experience at the University Hospital, Kuala Lumpur, would contribute some useful data on this dismal disease.

Material

During the five year period from January 1967 to December 1972, 114 patients with histologically proven carcinoma of the stomach were treated at the Department of Surgery. Patients without a histological diagnosis were excluded. Gastric Carcinoma in Malaysia is mainly a disease of the Chinese (Table I). 78% of the patients were Chinese, significantly in excess of their hospital utilisation, 55%, ($P < 0.05$). On the other hand, there was only a single case of gastric cancer in the Malays though this racial group formed 15% of the hospital admissions. The male to female ratio was 1.7: 1. Age at diagnosis ranged from 31 years to 74 years old, the peak incidence occurring in the seventh decade of life (44 cases, 38.6%). The mean age was 56.3 years (see Fig. 1).

Table I

Sex-Race Distribution and in relation to Hospital Utilization

Sex \ Race	Chinese	Indian	Malay	Others
Male	56	15	0	1
Female	33	8	1	0
Total	89	23	1	1
Percentage	78.0	20.2	0.9	0.9
Hospital Admission (1969/1970) Percentage	55	26	15	4

Clinical Presentation

The duration of symptoms varied from two weeks to three years with a mean of eight months. Epigastric pain was a complaint in 94 cases, 83%. The next commonest symptom was weight loss, present in 87 cases, 77%, followed by anorexia, 77 cases, 68%. Obstructive symptoms were common; 55 cases, 48%, had vomiting and 26 cases, 23%, had dysphagia. Gross bleeding resulting in haematemesis or malaena occurred in 23 cases, 20%. Two patients

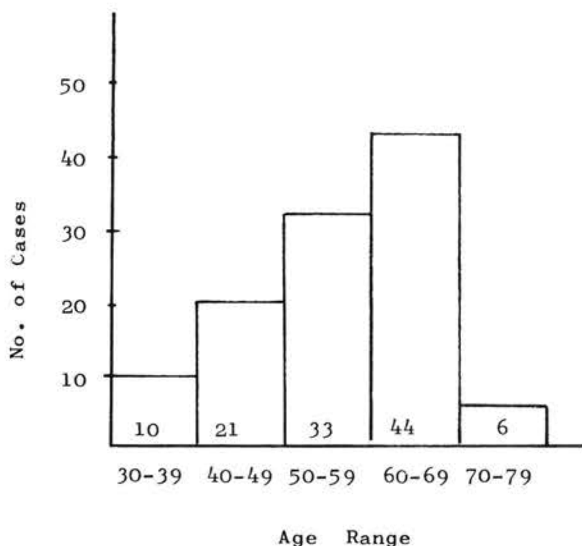

Figure 1
Carcinoma Stomach - Age Distribution in 114 Cases

had emergency laparotomy for perforation of gastric carcinoma.

In more than half the patients, there were physical signs of advanced disease; 59 cases or 52% were described as cachexic while 58 cases, 51% had an epigastric mass. 16 patients, 14% presented with a succussion splash. Other evidence of advanced disease were the presence of Virchow nodes in 14 cases, 12%, jaundice in 4 cases and a mass in the recto-vesical pouch on rectal examination in two patients. Anaemia was the rule. There was no predilection to blood group A (see Table II) as suggested by Aird et al (1953).

Table II
Blood Group in 114 Patients with Gastric Cancer

Blood Group	Present Series	University Hospital Blood donor (1968 – 72)
A	27.4	26.4
B	28.8	25.8
AB	8.2	5.9
O	35.6	41.9

Diagnosis

Barium meal was the main investigation confirming diagnosis. It was performed on 107 patients with a diagnostic accuracy of 88%. Endoscopic examination were performed on 42 cases and positive histopathology obtained in 30 cases.

Treatment and Results

Operative Findings :-

The site distribution of the tumours.agreed well with what has usually been reported. 60 cases, 52.6%, were located in the pyloric antrum; 19 cases, 16.7% in the lesser curvature; 12 cases, 10.5%, in the body and greater curvature; 19 cases, 16.7% in the cardia and fundus. In 4 cases, 3.5%, there was diffuse infiltration of the entire stomach.

80 cases, 72.4% had lymph node metastasis and 25 cases, 22.4% had liver metastasis. Invasion of adjacent organs or abdominal wall was noted in 73 cases, 64.2%. 26 patients, 23.9% had peritoneal dissemination.

Histopathology :-

The tumours were adenocarcinoma, well differentiated in 56 cases, 49.1%, moderately differentiated in 6 cases, 5.3%, and poorly differentiated in 34 cases, 29.8%. Colloid adenocarcinoma occurred in 15 cases, 13.2%, while the sclerosing variety were described in 3 cases, 2.6%.

Operative Procedures :-

Five patients who had their diagnosis established by neck gland or gastroscopic biopsy were considered inoperable and not subjected to further operative procedure.

Laparotomy was performed on 109 cases, (95.9%) and of these 66 cases, 58% were resectable. Subtotal gastrectomy (including oesophago-partial gastrectomy) were performed on 54 patients while 12 patients had total gastrectomy. By-pass procedures were performed on 25 cases (gastroenterostomy 24, and oesophago-jejunostomy 1) and gastrotomy in 8.

Results of Treatment :-

Fifteen patients died in hospital, the operative mortality being 13.8%. The main underlying causes of mortality were pulmonary complications, anastomotic leak and haemorrhage. The patients in this study were operated two to seven years ago and survival rate is difficult to define as many patients were lost to follow-up. We know however that at least 28 patients survived the first year, 15 the second year, eight the third year, five the fourth year and two have survived five years.

Discussion

Gastric carcinoma in Malaysia is predominantly a disease of the Chinese, indicated in this series by a

significantly higher frequency, 78%, than their hospital utilisation, 55%. In contrast gastric carcinoma is strikingly rare in the Malays there being only one case in this series; the Malays form 15% of the hospital admission and 55% of the population of the country. Similar racial differences in the frequency of gastric carcinoma have also been noted in Singapore (Fung et al, 1972, Ong et al, 1973). According to Shanmugaratnam (1973), the incidence of gastric carcinoma is higher in the Chinese in comparison to most western series.

Racial differences in the incidence of gastric carcinoma are well known though it is still speculative whether heredity or environmental factors play the more important role. It might be significant that the Chinese, more than the other racial groups, are exposed to certain environmental factors thought to predispose to gastric carcinoma, such as urbanisation (Haenszel, 1958) ingestion of liquor, hot food and drink (Ivy, 1955) and of food cooked in superheated fat and oils (Peacock, 1947).

As with so many other series, most of the patients presented with late manifestations of disease and were consequently beyond curative surgery. It cannot be over-emphasized that early diagnosis will only be possible if investigations with barium meal aided by gastroscopy be promptly performed on patients with epigastric discomfort or pain before an epigastric mass or other late signs of advanced disease appear. With detection of early (mucosal) gastric cancer by mass screening with gastrocamera, five year survival rates of 90% have been achieved in Japan.

Our treatment policy has been that of surgical excision whenever possible. Even in this series where late manifestation is the rule, a resection rate of 58% was achieved. Curative treatment was performed by wide surgical excision of the primary tumour with radical enbloc removal of the regional lymphatic drainage. A subtotal gastric resection (if necessary with the lower end of the oesophagus) was regarded as sufficient in most cases and total gastrectomy was reserved for instances of extensive gastric involvement, in which a surgical margin of 5 cm. could not otherwise be achieved. Frozen section histopathology of the surgical margins is essential to ensure complete resection.

For many of the patients the treatment can only be palliative. Even in these patients we have been impressed by the superior results after a successful resection so that it is our policy to resect whenever possible. The general well-being of the patient is far better following palliative resection as pain and haemorrhage cannot be relieved by a by-pass procedure. Carcinoma involving the cardia needs special mention as there is often a temptation to treat these unfortunate patients with a gastrotomy tube. Oesophago-gastrectomy (though often a palliative procedure) on the other hand relieves the distressing symptom of dysphagia and gives the patient a reasonably comfortable life of perhaps one or two years.

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An Appraisal of the Role of the Intra-Uterine Contraceptive Device for Family Planning in Malaysia*

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(Summary – The growing population in Malaysia poses serious economic and social problems unless the growth rate is reduced to 2% by 1985. There are indications that the family planning programme is failing. The author attributes this to insufficient usage of the IUCD and too much reliance on the Contraceptive Pill. Analysis of 73 IUCD acceptors in a series of 5201 total contraception acceptors reveal that the rate of complications among Malaysian women is no higher than other population series and, therefore, not the cause of poor usage of the IUCD. Other causes have been implicated and solutions offered and an immediate review of the family planning methods urged.)

Introduction

WITH THE ADVENT OF improved health measures, the problem of uncontrolled population growth has become universal. In Malaysia, the population at the end of 1967 was estimated to be 8,667,450 growing at the rate of 3% annually. This posed serious economic and social problems to the nation. It was estimated that if this rate was not reduced any effort made towards uplifting the standard of living of the people would be nullified. The National Family Planning Board, when formulating its policy and operational programme for the First Malaysia Plan, therefore, set up a target to reduce the rate of population growth to 2% by 1985.

The Family Planning Organisations offer many methods. Table A shows the number and percent of Acceptors by Method and Year.

It is noticed that Malaysia relies heavily on the Contraceptive Pill in the Family Planning Programme and Population Control (Grand Total Average = 89.0%). What is striking is the fact that only 1.6% of the total acceptors were using the Intra-uterine Contraceptive Device (I.U.C.D.). In the Review of the First Malaysia Plan period (1966 – 1970) only 63% of new acceptors were found to be continuing users at the end of 12 months, while only 44% were estimated still to be continuing users after 24 months. In other words, at the end of 2 years more than half the number of acceptors have ceased reliable contraceptive practice and in subsequent years probably more. A low continuation rate forecasts reduced efficiency and failure of the operational programme which will become more apparent in subsequent years. An analysis of the level of education showed that in 1968, 49.0% of the acceptors had either no schooling or education only up to primary level. In 1973, probably because the programme was reaching more rural women, this percentage was increased to 73.9%.[3] It has been shown that the highest rate of pill-defaulters come from this group of acceptors. In Taiwan, Korea and Japan where the population growth rate has been successfully reduced in their mass population control programme, the IUCD is more heavily relied on as it provides constant protection against pregnancy, reduces the number of defaulters and is less costly budgetwise. The acceptance rate of IUCD in these countries is between 20% to 40%.

The exercise of this paper is three-fold:-

(1) to determine whether the rate of complications of IUCD is higher among Malaysian women causing its low acceptance rate. If this is not the reason,

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Table A – (Based on National Family Planning Board, Malaysia – Monthly Acceptors Report Oct. 1975)

Period	Pill	IUCD	Sterilization	Others	Total
May – Dec. 1967	18,541	724	627	834	20,726
%	89.5	3.5	3.0	4.0	100
Jan. – Dec. 1968	69,337	1,173	2,609	1,816	74,935
%	92.5	1.6	3.5	2.4	100
Jan. – Dec. 1969	65,572	1,127	2,689	1,187	70,575
%	92.9	1.6	3.8	1.7	100
Jan. – Dec. 1970	49,601	801	3,474	2,105	55,981
%	88.6	1.4	6.2	3.8	100
Jan. – Dec. 1971	47,825	927	3,952	2,067	54,769
%	87.3	1.7	7.2	3.8	100
Jan. – Dec. 1972	48,938	1,138	3,867	2,474	56,417
%	86.8	2.0	6.8	4.4	100
Jan. – Dec. 1973	49,881	906	4,109	2,417	57,313
%	87.0	1.6	7.2	4.2	100
Jan. – Dec. 1974	53,734	801	4,181	2,964	61,680
%	87.1	1.3	6.8	4.8	100
Jan. – Oct. 1975	50,029	765	3,318	3,065	57,177
%	87.5	1.3	5.8	5.4	100

(2) to look into the actual causes and,

(3) to offer suggestions which may improve its acceptance.

A combined analysis of two 3-Year periods was made of the acceptors of IUCD at the University Hospital between April 1968 when its Family Planning Clinic started, to March 1971; and at the author's group practice clinics between January 1972 to December 1975.

Analysis of Data

A total of 2,501 patients sought for and accepted a method of contraception. 73 or 2.9% were fitted with the Lippes Loop intrauterine contraceptive device. 45 of the 73 (i.e. 60%) of the IUCD were inserted by doctors who have had very little experience in introducing them i.e. by house officers and medical officers who have not had previous experience in insertions. In none of the patients was the IUCD inserted by the family planning clinic nurse.

I *Parity*

Parity	*Number*	%
Less than 4	43	57.4
4 – 5	14	20.7
6 or more	16	21.9

The Table on parity shows that the choice of patient was satisfactory. 57.4% of acceptors were in the less-than-4 Group. However, the percentage of acceptors in the 6-or-more Group was high. Ideally, these patients should have accepted tubal ligation.

II *Education Level*

Level	*Number*	%
Nil or primary school	39	52.0
Secondary school	23	31.9
Post secondary school	11	16.1

The majority of the IUCD acceptors were of the 'nil' or 'primary school education' group.

III *Do you want another child?*

Answer	*Number*	%
No, never	35	47.9
Yes	28	38.4
Maybe	10	13.7

Almost half of the acceptors do not desire anymore children but did not choose tubal ligation which is a more reliable method.

From Tables I & III, it can be seen that there were many patients who were not ideal acceptors.

IV *Pregnancies*

Size of Lippes Loop	*No. inserted*	*Pregnancies*
A (22.5 mm)	Nil	Nil
B (27.5 mm)	14	2
C (30.0 mm)	51	2
D (31.0 mm)	8	Nil

Of the 73 women who had the IUCD inserted, pregnancy occurred in an incidence of 5.3 per 100 insertions. An unusual case of IUCD associated with ante partum haemorrhage was reported by the author[4] (E.H. Tan, 1971). In Shanmugaratnam's series (1969) from Singapore, a pregnancy incidence of 3.5 per 100 insertions was reported.[5] The higher incidence in this series is attributed to the failure to insert size C Loops resulting in the high usage of size B loops in parous women. There were no nulliparous women in this series. It is the author's view, that more size C loops could have been inserted by more experienced insertors since in 12 of the 14 size B insertions were carried out by less experienced house officers.

V *Bleeding*

Varies in form, from spotting for a few days after insertion to menorrhagia or intermenstrual bleeding. Usually bleeding problems occur in the first two or three months, thereafter the incidence was less. 15 patients complained of bleeding but only in 3 was the bleeding severe enough for the patient to request removal, making removal rate from bleeding to be 4.1%. All these patients belong to the middle or upper income bracket. The results compare favourably with figures from Wilson et Lovell (1967) where the removal rate of 19% was quoted for middle or upper class women. In the indigent women the removal rate was 4.5%.

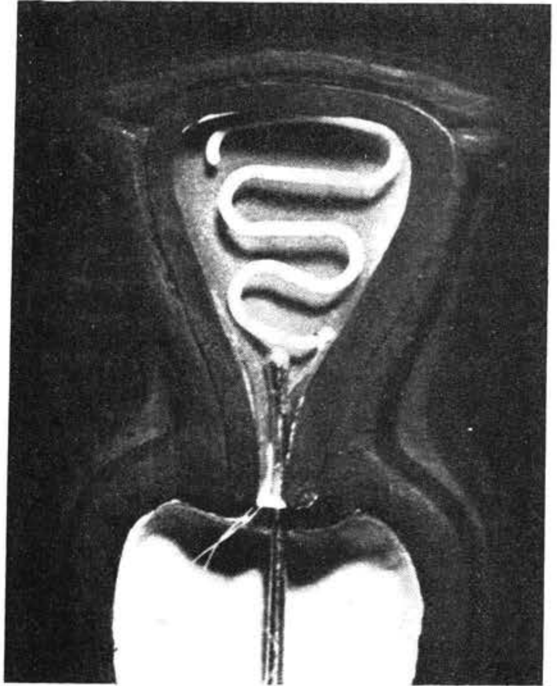
VI *Infection* was not a problem. Only 7 patients complained of excessive vaginal discharge which cleared up with vaginal pessary treatment.

VII *Pain*

Only 5 patients complained of dysmenorrhoea, backache and abdominal discomfort. In 3, the Lippes Loop had to be removed because of severe dysmenorrhoea.

VIII *Expulsion*

The overall expulsion rate was 8.1% at the end of 12 months. This compares favourably with Shanmugaratnam's series of 19.1% and IPPF net culmulative even rates 1972 of 14.8%[7]. Of these 6 patients, 3 had a reinsertion of a larger-sized Lippes Loop but the other 3 opted for another method of contraception. The author attributes the low expulsive rate to the observation of a compulsory step of using a probe to 'return' the stem of the loop from the cervical canal to the intrauterine cavity after insertion. (See figure).



IX *Ectopic Pregnancies and Translocation* were absent from this series.

X *Continuation rate*

The overall continuation rate at two years is at a very satisfactory figure of 83.1%. Patients who do not return for follow-up at the end of the two-year period were considered as failures.

XI *Racial Groups and Acceptance*

Race	*Number*	*%*	*Racial Composition of Family Planning Patients (%)*
Chinese	40	54.8	45
Malays	3	4.1	25
Indians	19	26.0	20
Others	11	15.1	10

Bearing in mind the fact that only 25% of the Family Planning patients were Malays,

it is, nevertheless, evident that the Malays have not accepted the IUCD as readily as the other races. The 3 Malay acceptors in this series already have more than 6 pregnancies and have not been on any other forms of contraception previously.

Discussion

Malaysia has the task of lowering the rate of population growth so as to maintain or elevate the standard of living. Analysis of the acceptors in the National Family Planning Programme shows that the acceptance rate of IUCD is relatively low and falling (See Table A) compared to other countries where successful mass population control programme has been carried out.

Comparison of 1957 and 1970 Census unadjusted figures showed an average annual population growth of 2.6%[8]. On the basis of the results of the Population Census 1970, the revised estimated population growth rate for the period 1970 – 1975 is 2.7%. That the National Family Planning Programme is losing its impact can be shown by the following Table B of Target Population and Achievement 1971 – 1975.[3] There has been no significant rise in the number of acceptors for the past few years and the achievement rate for the Target Population Rate is in fact decreasing.

Table B

Target Population and Achievement 1971 – 1975

Year	Target Population to be reached	Actual No. of Acceptors	Achievement (%)
1971	80,000	54,767	68.5
1972	100,000	56,417	56.4
1973	120,000	57,312	47.8
1974	140,000	–	–
1975	160,000	–	–
Total	600,000		

Compounded to this is the problem of age composition. The very large number of young people who are and will be maturing to reproductive ages means that even if fertility rates continue to decline population growth will continue at a relatively high rate for several decades.[8] These findings underline the need for increased effort and a revision of policy planning in the years to come, if at all, Malaysia is to reach the Target Population Growth R te of 2.0% by 1985.

From the above problems specific to the Malaysian Context, a case can be made to increase the usage of IUCD to 20 – 40% in the country's future Family Planning Programme. Malaysia's Family Planning Population is a young one with a low degree of educational level in the majority of acceptors. A high Continuation Rate is necessary to ensure success in lowering the population growth rate in the next ten years. The Contraceptive Pill is the most convenient method. It enjoys a high acceptance rate but it unfortunately suffers from low continuation rate since 73% of the acceptors are less educated and lack sustained motivation. Injectable Preparations have yet to prove successful in Malaysia because of bleeding problems and prolonged amenorrhoea. They seem suitable only in those who have completed their families and do not wish to be sterilised i.e. the older population group. Also experience in their use is still limited. An increase in the use of sterilization has been achieved. (See Table A). However, its emphasis will not solve the population control problem of the increasing number of young mothers who have not completed the family and need a reversible method. The use of the menstrual extractor is controversial, while termination of pregnancies other than on medical grounds, by any method is still illegal in this country and fraught with possible complications. The increased usage of the IUCD can be emphasised in future policies provided it can be shown that the complication rate among Malaysians is no higher than in other populations where its use has been successful and accepted.

This series has shown that the complication rate is comparable if not lower than the average figures given by the International Planned Parenthood Federation and also the various other studies quoted. This then is not the cause for the lower acceptance rate.

Probable causes and implementations to improve the acceptance of IUCD among Malaysian women are discussed below:-

1. *Personal Bias* towards a more convenient pill method by clinical staff should be minimised. Another study similar to the one done by the author but on a larger scale and under more optimal conditions could confirm that with adequate training and ready availability of well-trained insertors, the acceptance rate can be raised and the complication rate reduced among Malaysian women.

2. At present the IUCDs are *inserted mainly by doctors*. Suburban patients motivated to accept this method often have to tralve

to town health centres for insertions. It is felt that family planning nurses or midwives at health centres could be trained to insert the IUCD. The availability of these insertors could improve acceptance rate and it has been shown by studies carried out in New York City, Kentucky and Pakistan that they do not increase the number of complications.

3. *The use of 'second-generation' copper impregnated IUCDs'* have lowered complication rates.[9] Copper 7 IUCDs' have also been used with success in nulliparous women desiring contraception. Although the cost factor may initially look inhibitive on the large scale for population control, they may prove more economical than the contraceptive pill in the long term.

4. Beginner and Refresher *Courses in Family Planning* should be conducted regularly. They can be used to motivate general practitioners particularly those in the rural areas to recommend use of IUCDs and to allow them practical experience in the proper method of insertion. Likewise paramedical personnel could also be trained.

5. *The poor acceptability rate among the Malays* must also be investigated to improve mass population control since they form about 50% of the population of Malaysia. Between 1957 – 1970, the Malay urban population grew at a much faster rate (5.4%) than that of the Chinese (2.8%) or the Indians (3.2%). Although this may be taken to represent urbanisation of Malays, it cannot be denied that the rural Malay population also has increased when compared to the other races (Malays 2.8%, Chinese 1.9%, Indians 1.9%). Cultural traits must not be ignored. Fear, suspicion, embarrassment of pelvic examination can be overcome by education and information as well as improving the approach to these patients.

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Retinal Detachment Review of 50 Consecutive Cases

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RHEGMATOGENOUS RETINAL DETACHMENT is not uncommon in Malaysia. It is seen more commonly in the Chinese; whether this is due to the fact that the Chinese are by far an urban race and so closer to larger hospitals or to the fact that the incidence of myopia greater than −6D sph. is higher in them (Chandran 1972) is difficult to ascertain at this stage. The University Hospital is at the receiving end of most retinal detachments in West Malaysia. This paper is a preliminary report of 50 consecutive cases seen and operated by the authors at this hospital over a period of one year from January 1975 to January 1976. This communication is the first of its kind in the Malaysian medical literature.

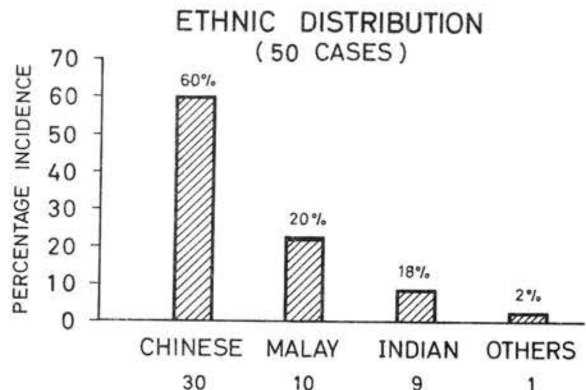
Jules Gonin in the 1920's rationalized the treatment of retinal detachment when he said "to cure a retinal detachment one must seal the break in the retina." He originally drained sub-retinal fluid and used a Paquelin cautery to induce an area of aseptic chorioretinitis (Gonin 1923). Weve substituted diathermy for cautery. Since then retinal detachment surgery has been further developed and modified by Arruga, Schepens, Lincoff and many others. The lifetime contribution by Charles Schepens to retinal disease has "revolutionized the science and art of fundus diagnosis. His development and applications of new techniques in the treatment of retinal disease have cured more patients, trained more disciples and prevented more blindness than any other effort in our time." (H.F. Allen 1972).

In 1951 Custodis introduced the technique of external scleral plombage with a polyviol implant, diathermy and non-drainage of fluid (Custodis 1953). Lincoff learnt this technique from him in 1958 but modified it slightly by using an episcleral silicone sponge, non-drainage and substituting cryotherapy for diathermy (Lincoff et al 1965).

Incidence

The present series shows that Chinese formed 60% (30) of the total, Malays 20% (10) and Indians 18% (9). (Table I).

TABLE I



Age and Sex

Most of the cases fell between the ages of 20 and 59. (Table II). The sex ratio of males to females was 3:1 (Table III).

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Table II

Age Groups

	No.	%
0 – 19	8	16
20 – 39	16	32
40 – 59	14	28
60+	12	24

Table III

Sex

	No.	%
Male	38	76
Female	12	24

Refractive State

34% (17) of the patients were myopes of which 12% (6) were high myopes of refractive error greater than −8D sph. Aphakia formed 28% (14). (Table IV). This is much higher than that seen in other series. (Chignell 1974; Tulloh 1965).

Table IV

Refractive Groups

	No.	%
Hypermetropia	–	–
Myopia <−8D	11	22.0
High Myopia >−8D	6	12.0
Aphakia	14	28.0
Emmetropia	19	38.0

Distribution of Breaks

Analysis of the type and location of the breaks shows that there were 41 horse-shoe tears of which 50% were in the upper temporal quadrant. 60% of all round holes were seen in the upper temporal and 33% in the lower temporal quadrant. In all, 71% of both types of breaks were found in the temporal retina. There were only two cases of retinal dialyses. (Table V).

Extent of Detachment

96% (48) of the patients had a macula detachment when first seen. 20% (10) had total retinal detachment. Only 2 patients came to us without a macula detachment. Both these patients were successfully treated and achieved 6/6 vision post-operatively. 5 patients had a detachment in their only eye. All of them had successful surgery.

Table V

Analysis of Breaks

Type of Break	No.	Distribution %			
		UT	UN	LT	LN
Horse-shoe	41	50	27.8	12.2	10
Round	42	60	4.8	33.0	2.2
Dialyses	2				

UT upper temporal
UN upper nasal
LT lower temporal
LN lower nasal

Method

All patients were examined with the binocular indirect ophthalmoscope with scleral indentation and a detailed retinal diagram was documented. This was always followed by 3-mirror contact lens biomicroscopy to assess in greater detail areas of degeneration of the retina, the mobility of the retinal folds, the state of the vitreous and the angle of the anterior chamber. Both eyes were always examined. We feel that a lot of time should be spent in examining the retina before surgery is planned. If no holes were found by one observer, the patient was looked at by the other author. If repeated examinations did not reveal a hole, a retinal diagram was drawn and the site of probable location of the hole was determined, by the configuration of the detachment, according to the Lincoff series. (Lincoff 1971).

Technique

External scleral plombage, cryoretinopexy and non-drainage of fluid is the basic technique that we used in the majority of our cases. At surgery the holes were localised under direct vision with the indirect ophthalmoscope and cryo-applications were placed over and around the break. We use cryo-therapy because of its many advantages; damage to the sclera is minimal making re-operation, if necessary, safe and easy. We buckle the sclera using silastic silicone sponges with deep scleral mattress sutures. Perforation of the sclera may occur if due care is not taken during this procedure. This may be prevented by keeping the point of the needle always in view and by routinely using spatula needles. The position of the indent produced is monitored with the indirect ophthalmoscope. No fluid is drained and this raises the intraocular pressure but as aqueous drains from the eye the sponge sinks in and produces a deep buckle. The pulsation of the central retinal artery at the disc is constantly monitored so as not to raise the intraocular pressure above

that of the systolic blood pressure as this would immediately result in a central retinal artery occlusion.

If an encircling procedure is undertaken we use a silicone strap placed at the equator to reduce the volume of the globe and to relieve vitreous traction. No subretinal fluid is again drained unless specifically indicated. In our experience drainage of subretinal fluid is the single most dangerous procedure in retinal detachment surgery. This single procedure, if not properly controlled and monitored, can ruin your whole operation. It converts your extraocular operation into an intraocular one with all its resultant complications. We attempt to close all holes on the operating table but this may not be possible in patients with high balloons using the non-drainage technique. However, as long as the break is sitting properly over the indent, subretinal fluid will be steadily absorbed over the next few days and the retina will become flat.

Careful indirect ophthalmoscopy with scleral depression is performed on the fellow eye during surgery in all patients. All lattice degeneration, thin areas of retina, snail track degeneration and retinal breaks except round holes at the ora are treated prophylactically with cryotherapy. It is our feeling that all retinal breaks without a detachment should be treated prophylactically with cryo applications, for it is not possible to predict which retinal holes will, or will not lead to a retinal detachment. One of us (A.F.) has recently treated, as a prophylactic measure, a large but flat horse-shoe tear with vitreous traction, using a local implant. In 46% (23) of our patients some predisposing degeneration to retinal detachment was seen in the fellow eye and treated.

On the 1st post-operative day the patient is ambulated. We discourage post-operative complete bed rest for we feel that making the patient lie in bed even when the hole has not been properly mounted by the buckle, achieves nothing.

The non-drainage technique was the procedure of choice in 64% (32) of the patients. 36% (18) were drained; 8% (4) of them inadvertently. One patient had a paracentesis done because of sudden rise of intraocular pressure at the end of surgery (Table VI).

Table VI

	No.	%
Not Drained	32	64
Drained	18	36

58% (29) had a local implant only. All horse-shoe tears were closed with a radial sponge, whenever possible, to prevent fish-mouth leakage post-operatively. 34% (17) had an encirclement together with a scleral sponge (Table VII). 16% (8) patients had this performed as a second procedure when previous surgery had been unsuccessful, and 7 achieved successful anatomical reapposition. The two cases of retinal dialyses were treated successfully with an encirclement only.

Table VII

Type of Indent

	No.	%
Local Sponge	29	58
Radial	18	36
Circumferential	11	22
Encirclement	4	8
Encirclement and Local Sponge	17	34

In 10% (5) of patients no retinal holes could be seen on repeated examination. 3 of them were aphakia's. An encircling procedure was undertaken on 4 of these patients and the fifth had a local implant placed at the site of probable location of the retinal break. Only two cases achieved successful reapposition of the retina by this blind technique.

60% (30) of patients reattached with one operation. In 53.3% (16) of these patients the retina was flat on the 2nd post-operative day. A further 26% (13) attained anatomical reapposition after two or more operations. 4 patients re-detached after initial successful surgery and the 3 who underwent surgery again attained anatomical reapposition. The other patient had a vitreous haemorrhage which has still not cleared. This makes an overall anatomical success rate of 86% (43). There were 14% (7) failures. (Table VIII).

Table VIII

Results of Retinal Surgery

	No.	%
Reattached with 1 operation	30	60
Reattached after 2 or more operations	13	26
Overall success	43	86
Failures	7	14

43% (3) of our failures were due to the inability to identify a retinal break. 2 of these were aphakia's.

It is well known that aphakic patients tend to have smaller breaks and they are difficult to locate. Our other failures were due to a macula hole, massive vitreous retraction and to a defective indent. (Table IX).

Table IX
Analysis of Failures (7 Cases)

	No.	%
No holes	3	43
Phakia	1	14.3
Aphakia	2	28.7
Macula hole with massive vitreous retraction (M.V.R.)	1	
Defective indent	1	
Multiple holes with M.V.R.	2	

Complications

Perforation of the sclera, while placing the mattress sutures, occurred in 12% (6). This resulted in the escape of sub-retinal fluid when intentional drainage had not been planned in 4. A small vitreous haemorrhage occurred in 12% (6) of patients who had sub-retinal fluid drained. One patient had a retrobulbar haemorrhage and another a partial 3rd nerve palsy due to excessive manipulation during surgery. These resolved in time. Pigment fallout, which results from disruption of pigment epithelial cells occurred in 6% (3) of patients who had excessive cryo-applications. (Fig. I). There was 1 case of macula pucker. Extraocular infection occurred in 4% (2) and this was controlled adequately with topical and systemic antibiotics. The silastic silicone plomb was removed in 10% (5) as it was being extruded. There was no recurrence of detachment after removal, as this was done many months after initial surgery. (Table X).

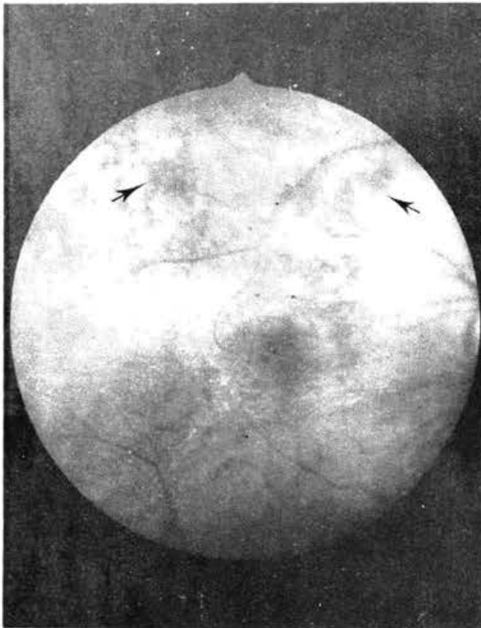

Fig. I
Fundus photograph showing pigment fallout (arrows) around the macula following excessive cryotherapy. Visual acuity was *6/24*.

Table X

Complications

	No.	%
Operative:		
Perforation of sclera	6	12
Vitreous haemorrhage	6	12
Retro-bulbar haemorrhage	1	2
Partial 3rd nerve palsy	1	2
Post-operative:	No.	%
Pigment fallout	3	6
Macula pucker	1	2
Choroidal detachment	1	2
Extra-ocular infection	2	4
Plomb extruded	5	10

Table XI shows pre-operative and post-operative visual acuity in groups from 6/5 to perception of light (PL). 44% (22) had a pre-operative visual acuity of counting fingers (CF). After surgery two had the same vision and two were worse but 36% (18) achieved a visual acuity of 6/60 or better. Pre-operatively 22% (11) patients had vision of hand movements (HM) only but following surgery 18% (9) improved to have a visual acuity of 6/60 or better. Post-operative vision was better than pre-operative visual acuity in 82.2% (35) of patients who achieved anatomical reapposition of the retina. In all, 87.1% (27) had a post-operative visual acuity of 6/60 or better when pre-operative vision had been less.

Summary

50 consecutive cases of retinal detachment is analysed. 86% of them had successful anatomical reapposition of the retina. The majority of cases 64% had a non-drainage procedure. In 10% (5) no retinal holes were seen. 4 of them had a blind encircling procedure and the other had a local implant. Drainage of sub-retinal fluid was the single most dangerous procedure during surgery. Perforation of the sclera occurred in 12% (6). Vision improved in 82.2% (35) of the patients who had successful surgery.

Table XI

Visual Acuity After Surgery (50 Cases)

PRE-OPERATION		POST-OPERATION						
Visual Acuity	No.	6/5–6/6	6/9–6/12	6/18–6/24	6/36–6/60	CF	HM	PL
6/5 – 6/6	2	2	–	–	–	–	–	–
6/9 – 6/12	1	–	1	–	–	–	–	–
6/18 – 6/24	3	–	1	1	1	–	–	–
6/36 – 6/60	7	–	–	2	4	1	–	–
Counting fingers (CF)	22	–	3	5	10	2	2	–
Hand movement (HM)	11	–	–	3	6	–	2	–
Perception of light (PL)	4	–	–	–	1	1	–	2
TOTAL	50	2	5	11	22	4	4	2

(Adapted from S.S. Grupposo, 1975)

Acknowledgement

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Comparison of Oral and Intravenous Glucose Tolerance Tests in Third Trimester of Pregnancy

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AT THE PRESENT TIME, the type of glucose tolerance test for the assessment of abnormal carbohydrate metabolism in pregnancy remains a controversial topic. Each test has its own supporters despite the advantages and disadvantages.

The oral glucose tolerance test (OGTT) is considered to be a more physiological approach in the examination of carbohydrate metabolism. It utilizes the route normally taken by carbohydrate in the diet, and digestion and absorption promotes secretion of secretin and intestinal glucagon both of which stimulate insulin secretion.

On the other hand, the intravenous glucose tolerance test (IVGTT) bypasses this mechanism and might therefore be considered unphysiological.

Results of OGTT are on the whole more difficult to interpret and are variable in the same individual. The IVGTT however, is easier to interpret and gives good reproducibility in the same patient. Against this background of controversy, it was decided to compare the OGTT and IVGTT in the same patient in the third trimester of pregnancy, where there were indications for glucose tolerance testing.

It is known that a transient diabetic state may develop in pregnancy without antecedent abnormality. This may be associated with altered glucose tolerance curves, glycosuria and hyperglycaemia. Reversion to apparently normal metabolism status promptly follows delivery.

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It has been suggested that alteration in carbohydrate metabolism in pregnancy might be due to complex synthesis and secretion of human placental lactogen (HPL), oestrogen and progesterone in the placenta (Kaplan and Grumbach, 1964). Even though the metabolic role of HPL is still uncertain, from the evidence available, it seems that it can both antagonize insulin and stimulate its secretion. HPL also promotes adipose tissue lipolysis, thus causing an increase in the level of plasma fatty acids (Grumbach et al, 1966). In women who have the relative insulin deficiency of latent diabetes, the additional stress of pregnancy will consistently impair carbohydrate tolerance and may be responsible for the first appearance of gross metabolic abnormalities of diabetes.

It is very difficult to interpret glucose tolerance in pregnancy and to determine the presence and significance of minor deviations from normal. This is because many factors may alter glucose tolerance. Pregnancy is associated with changes in gastro-intestinal absorption (Hytten and Leitch, 1964) and renal function (Welsh and Sims, 1960).

There is a lack of general agreement with regard to the criteria for 'abnormal' oral glucose tolerance curve. Fasting blood sugar values have been used. However, there is a controversy with regard to the definition of upper limits of 'normal'. O'Sullivan and Mahan (1964) regard it as 90 mg./100 ml., while Malins (1968) regards it as 100 mg./100 ml. 'Peak values' and '2 hour values' of blood sugar have been used by many workers. The British Diabetic Association (Fitzgerald and Keen, 1964) defined an

'abnormal curve' if the peak value exceeds 180 mg./100 ml. and the 2 hour value exceeds 110 mg./100 ml. (venous blood).

Recently, an 'H index' which describes the shape of an oral glucose tolerance response curve and appears to be a measure of the efficiency of homeostatic control was introduced by Billewicz et al (1973). They claimed the index could satisfactorily differentiate clinically diabetic from non-diabetic individuals and seems to provide a sensitive method of describing small changes in homeostatic control such as might occur in pregnancy.

The intravenous glucose tolerance test using 25 gm. of glucose is highly reproducible and is preferred to oral test by many investigators (Duncan, 1956, McIntyre et al, 1964). Two indices of glucose tolerance, the 'total index' and the 'increment index' have been used to evaluate the results of the tests. However, Duncan (1956) found that the 'increment index' is more reproducible and hence preferred to the 'total index' since it is not affected within two fold variation in the dose of glucose injected.

In this study, an attempt is made to compare the results of the oral and intravenous glucose tolerance tests in 16 pregnant patients in the third trimester. The criteria for 'abnormal' OGTT are based on the definition given by the World Health Organization (1965). The 'increment index' is used to evaluate the results of IVGTT. The value of less than 2.97 is regarded as evidence of impaired glucose tolerance.

Selection of patients and method of study

Sixteen patients who were certain of their dates of the last menstrual period and were between 30 and 36 weeks' gestation were selected for the study. The mean age of the patients was 24.4 years, and the mean gravidity was 3.06. Each patient had one

Table I

Details of Patients

Case No.	Age (yrs)	Gravidity	Gestation (wks)	Height (cm)	Weight (kg) 20 wks.	Calculated Non-pregnant Weight (kg.)	Birth Weight (gm)
1	21	1	36	165	65.5	61.5	3520
2	25	6	35	161	62.6	58.6	3680
3	27	2	35	163	66.2	62.2	2800
4	26	1	36	165	57.0	53.0	5620
5	29	3	30	166	58.5	64.5	4340
6	20	3	35	155	75.7	71.7	3610
7	28	4	34	145	55.5	51.5	2980
8	25	2	34	155	76.0	72.0	3350
9	39	8	36	160	69.4	65.4	4080
10	28	3	36	171	75.0	71.0	3440
11	24	2	33	155	68.4	64.4	3150
12	22	2	33	161	55.3	51.3	3440
13	29	2	36	166	62.6	58.6	3560
14	20	3	31	166	67.2	63.2	3790
15	16	1	33	166	57.6	53.6	2830
16	42	6	32	157	77.5	73.5	2780
Mean	26.31	3.06	34.06	161	66.25	62.3	3435
S.D.±	6.68	2.01	1.91	6.41	7.43	7.44	447

Table II

Fasting Plasma Glucose Levels Day 1 (O.G.T.T.) Day 2 (I.V.G.T.T.)

Sample	Number of Cases	Mean Plasma Glucose ± S.D. (mg./100 ml.)
Day 1 (O.G.T.T.)	16	72.38 ± 6.89
Day 2 (I.V.G.T.T.)	16	64.56 ± 12.06

t = 2.249
Difference is significant $p < 0.05$

or more of the following indications for glucose tolerance test (see Table III). The indications were glycosuria, family history of diabetes, previous large babies (more than 10 pound), previous unexplained stillbirth, recurrent abortions and symptom of polydipsia and polyuria. OGTT was performed at the first visit and the IVGTT two or three days later.

Table III

Relationship between Results of G.T.T. and Indications for Testing

Indications for Testing	Number of Patients		
	With Indi-cations	Abnormal O.G.T.T.	Abnormal I.V.G.T.T.
Glycosuria	8	3	4
Family history of diabetes	1	1	0
Previous large baby (10 lb.)	4	1	2
Previous stillbirth	1	1	0
Recurrent abortions	1	0	1
Symptom of polydepsia and polyuria	1	1	1

Procedure

After an overnight fast of at least 12 hours and following a 20 minute rest, 2 ml. of venous blood was taken for fasting plasma glucose. At the same time, urine sample was taken and tested for sugar, After an oral administration of 50 gm. of glucose. specimens of venous blood were collected 1 hour, 2 hour and at 2½ hours. Urine samples were also obtained at the respective times.

Having obtained informed consent, the same patients were tested three days later by the IVGTT. After an overnight fasting of approximately 12 hours and 30 minutes rest, an intravenous teflon cannula was inserted into a vein, preferably in the antecubital fossa. A two-way stopcork was attached to the cannula to facilitate frequent sampling. After obtaining two fasting blood samples for glucose examination, 50 ml. of a 50 per cent dextrose solution (25 gm. glucose) was injected intravenously in the other arm over a period of 3 to 4 minutes. Blood samples were taken at 4, 10, 20, 30, 40, 50 and 60 minutes after glucose injection. Blood samples were collected in heparinised tubes and then centrifuged.

Plasma glucose estimations using the auto-analyser

Glucose estimations were carried out on plasma samples utilizing the enzyme system, glucose-oxidase/peroxidase on an autoanalyser. This method is specific for glucose in which other reducing substances do not interfere producing unduly high values. In this method, glucose oxidase catalyses the oxidation of glucose to gluconic acid and hydrogen peroxide. The peroxidase then catalyses the transfer of oxygen to chromogenic oxygen receptor. The analyser measures the rate of consumption of oxygen which is directly proportional to the concentration of glucose in the sample.

The fasting plasma glucose level for the IVGTT was taken as the mean of the estimates of the two samples taken before glucose injection.

Criteria for abnormal Oral Glucose Tolerance Test

Recommendations given by the World Health Organization (1965) were taken as the criteria for evaluation of the results of the OGTT. This was based on the two hour value of plasma glucose as follows:-

Normal	– less than 110 mg./100 ml. (venous blood).
Probable diabetic	– 110 – 129 mg./100 ml.
Diabetic	– 130 mg./100 ml. or more.

The fasting level of plasma glucose of 130 mg./100 ml. or more was regarded as diabetic.

Calculation of the increment index

The result of the IVGTT is expressed as an 'increment index' described by Duncan (1956) and represent the rate of fall of blood glucose as a percentage of the value in excess of the fasting level. Amatuzio (1953) reported that if the log of the increment blood glucose is plotted against time, a straight line is obtained and the increment index can be calculated

using the formula $\frac{\log e^2}{t}$ where t is the time in minutes required for the blood glucose increment value at any point to be halved. An index of more than 2.97 is regarded as normal, 2.46 – 2.97 as suspicious of diabetes and less than 2.46 as diabetic.

RESULTS

Fasting plasma glucose

As shown in Table II, the mean fasting plasma glucose level on Day 1 when the OGTT was performed was 72.38 mg./100 ml. ± 6.89. This value is significantly higher than that obtained on Day 2 when the IVGTT was carried out, the value being 64.56 mg./100 ml. ± 12.06 ($p < 0.05$).

This finding is in agreement with that of Campbell et al (1974) who reported that although there was little day to day variation in plasma glucose, the levels were significantly elevated on the first day of the study. They suggested that this was probably due to excessive output of adrenaline on the first day due to anxiety.

None of the patients in this series had abnormal levels of fasting plasma glucose, on the basis of the criteria reported by Malins (1968).

Oral Glucose Tolerance Test

Basing the results on the recommendations given by the World Health Organization (1965), two patients (12.5%) had diabetic pattern of OGTT. Five patients (31.25%) were classified as 'probable diabetic' and nine patients (56.25%) as normal. Of the two patients who had diabetic OGTT, one had an abnormal and the other a normal IVGTT.

Table IV

Results of Oral Glucose Tolerance Test (W.H.O. Classification)

Total Number of Patients	O.G.T.T. Results		
	Normal	Suspicion of Diabetes	Diabetic
16	9 (56.25%)	5 (31.25%)	2 (12.5%)

The total number of patients showing abnormal pattern of OGTT was 7 out of 16 (43.8%). Of the 8 patients who were tested for glycosuria, 3 showed abnormal OGTT (37.5%), whilst one of the 4 patients tested because of previous large babies showed an abnormal OGTT (25%). The other 3 abnormal OGTT came from patients with family history of diabetes, previous stillbirth and symptoms of polydipsia and polyuria respectively (see Table III).

Intravenous glucose tolerance

As shown in Table V, 8 out of 16 patients (50%) had abnormal intravenous glucose tolerance. Five patients (31.3%) showed diabetic curve because their increment indices were less than 2.46. Three patients (18.7%) were regarded as 'suspicion of diabetes' since their increment indices were between the range of 2.46 to 2.97.

Table V

Results of I.V.G.T.T. (Increment Index)

Number of Patients	Increment Index		
	2.97	2.46 – 2.97	< 2.46
16	8 (50%)	3 (18.7%)	5 (31.3%)

Four out of eight patients (50%) whose main indication for the test was glycosuria had abnormal IVGTT, and 2 out of 4 patients (50%) who were tested because of having delivered large babies previously had abnormal IVGTT. The other 2 patients who had abnormal IVGTT had history of recurrent abortions and symptoms of polydipsia and polyuria respectively.

Comparison of OGTT and IVGTT

As shown in Table VI, four out of 16 patients (25%) had both abnormal OGTT and IVGTT. Three patients (18.7%) had abnormal OGTT only whilst four patients (25%) had abnormal IVGTT only. Both OGTT and IVGTT were found to be normal in 5 patients (31.3%).

Of the three patients who had abnormal OGTT only, one had diabetic pattern whilst the other two had borderline OGTT. On the other hand, of the four patients who had abnormal IVGTT only, three had gross abnormality showing diabetic pattern and only one showed borderline IVGTT. Of the 16 patients tested, two patients showed diabetic pattern of OGTT whilst there were five patients showing diabetic pattern of IVGTT.

Outcome of pregnancy

Seven patients (44%) had induction of labour for various indications. One patient however, had an elective Caesarean section. Of the 15 patients who were in labour, 7 (47%) had spontaneous vaginal deliveries. Eight of the patients required assistance in the forms of instrumental delivery (4 patients) or emergency Caesarean section (4 patients). The main indication for assisted delivery was 'foetal distress'. One patient who needed emergency Caesarean section for 'foetal distress' delivered a

Table VI

Relationship between O.G.T.T. and I.V.G.T.T.

Total Number of Patients	Abnormal O.G.T.T. and I.V.G.T.T.			
	Both Abnormal	Abnormal O.G.T.T. only	Abnormal I.V.G.T.T. only	Both Normal
16	4 (25%)	3 (18.7%)	3 (25%)	5 (31.3%)

congenitally malformed infant having thoraco-lumbar' meningmyelocele. This infant ultimately died on the seventh day. Both the OGTT and IVGTT of this patient was normal.

There was no stillbirth and all the other 15 infants were healthy at the time of discharge. Four infants (25%) had one minute Apgar score of between 0 – 6.

Birthweight

The mean birthweight of 16 infants 3435 gm. (Table I). Even though there were four patients who previously delivered infants weighing more than 10 pounds, in this series there was only one patient who delivered a macrosomic infant (birth weight 4340 gm.). However, both the OGTT and IVGTT of this patient were normal.

DISCUSSION

The assessment of abnormalities of carbohydrate metabolism in the non-pregnant state is fraught with difficulties because of the many factors which control its homeostasis. The situation is made more complex in pregnancy by the increasing levels of hormones which are considered to be diabetogenic, for example oestrogen, cortisol and Human placenta lactogen (HPL).

Most authorities would accept that patients with fasting glycosuria, family history of diabetes, obesity above 85th percentile, previous history of large for dates baby, unexplained stillbirth, recurrent abortions, unexplained neonatal death and hydramnios should be subjected to glucose tolerance test.

The significance of glycosuria in pregnancy is controversial. The presence of glycosuria in urine depends on blood sugar, glomerular filtration rate and tubular reabsorption of glucose, and there is evidence that each of these factors is altered in pregnancy. Sutherland et al (1970) claimed that there was no correlation between random glycosuria with chemical (gestational) diabetes. However, they found 15 percent incidence of abnormal IVGTTs in 62 pregnant patients with second fasting morning glycosuria. In this study, there is lack of standardization with regard to glycosuria. Some of the patients had second fasting glycosuria, whilst others had random glycosuria on two or more occasions and a few had random glycosuria with additional indications for the test. Sutherland et al (1970) felt that fewer women with glycosuria in pregnancy need to be tested unless there in second fasting morning glycosuria where the risk is about 8 per 1,000 ante-natal women. In this study, 4 out of 8 patients (50%) who had glycosuria were found to have abnormal intravenous glucose tolerance.

There are four patients who delivered large babies previously (birth weight more than 4100 gm.). One of them delivered a 'large baby' in the present study (birth weight 4340 gm.). Two out of 4 patients (50%) had abnormal IVGTT. Even though several factors such as genetic predisposition, parenteral size, gestational maturity up to 41 weeks and multiparity could influence the birth weight, the association of diabetes with high birth weight has been reported by many workers, Knitzer (1952) found diabetic glucose tolerance in 31 percent of the patients who delivered 10 pound infants 2½ years previously. Mickal et al reported diabetic glucose tolerance in 60 percent of those women followed for 12 years after delivery of an infant weighing 4500 gm. or more.

It is generally accepted that the fasting blood sugar levels in pregnancy are lower than in non-pregnant state. The difference is probably of the order of 10 mg./100 ml. (Bleicher, O'Sullivan and Frienkel, 1964; Tyson, 1969). The levels of fasting blood sugar quoted in late pregnancy range from 66 mg./100 ml. to 71 mg./100 ml. Lind (1973) in his study reported fasting blood sugar levels of 68.8 mg./100 ml. in late pregnancy. The mean fasting blood sygar levels taken on Day 1 and Day 2 in this series were 72.38 mg./100 ml. and 64.56 mg./100 ml. respectively.

The generally accepted fasting blood sugar values for normal and diabetic patients as reported by Malins (1968) are as follows:-

Normal	:	60 – 100 mg./100 ml.
Suspicion of diabetes	:	100 – 130 mg./100 ml.
Frank diabetes	:	above 130 mg./100 ml.

None of the patients in this study had an abnormal fasting level of blood glucose, even though the IVGTT showed 50 percent incidence of impaired glucose tolerance. The insignificant relationship between fasting blood glucose and increment index, suggests that fasting blood sugar is of no predictive value as far as the handling of glucose is concerned following a glucose load. This supports the suggestion made by Wright et al (1968) that the finding of a normal fasting blood sugar does not exclude diabetes and that a glucose tolerance should be done if there are other reasons for suspecting the diagnosis.

From this small series, it is interesting to note that four patients (25%) showed abnormality in both the OGTT and IVGTT, whilst five patients (31.3%) showed both normal OGTT and IVGTT. In these nine patients, the decision is clear. However, the problem lies in the other seven patients in whom three (18.7%) showed abnormality in OGTT only, and four (25%) showed abnormality in IVGTT only. Three out of four patients showing abnormal IVGTT and one out of three patients showing abnormal OGTT had a severe degree of abnormality. This may suggest that IVGTT is more useful in detecting abnormal carbohydrate tolerance in pregnancy.

In comparing the validity of the OGTT and IVGTT during pregnancy, Benjamin and Casper (1966) concluded that the OGTT is more reliable than the IVGTT. On performing both tests in 144 patients in the third trimester, they found that the OGTT when 'normal' in pregnancy was 88 percent valid, and when 'abnormal' was 89.4 percent valid. The corresponding figures for the validity of the IVGTT were 53 percent and 95.7 percent respectively (the validity is based on comparison of the results of GTTs during pregnancy with those of the stressed GTTs done six weeks after delivery). Hence, when 'normal' the difference was striking, the intravenous test showing 47 percent incidence of false negative results as contrasted with an incidence of 12 percent false negative results with the oral tests. Supporters of OGTT also claimed that the intravenous tests have several disadvantages such as the need for frequent sampling, the accuracy in timing the sampling and also the occasional occurrence of venous thrombosis.

On the other hand, supporters of the IVGTT like Lunbaek (1962) claimed that OGTT is a clumsy tool, takes several hours to perform and it depends upon the state of the digestive tract and renal function which are usually altered during a pregnancy. Thus, the results are difficult to interpret. Duncan (1956), McIntyre et al (1964) and Fisher et al (1974) have shown that the IVGTT is reproducible and hence a reliable method of detecting minor degree of impairment of glucose tolerance in pregnancy.

Several factors are known to affect the glucose tolerance during pregnancy. Fisher et al (1974) showed that the glucose tolerance decreases with advancing stage of gestation. Sharp et al (1964) showed that the carbohydrate tolerance during pregnancy declines with advancing age of the patients. Several workers have reported a high rate of abnormal glucose tolerance in obese pregnant patients (Ogilvie, 1935; Beaudain, 1953). Pyke (1956) and Fitzgerald et al (1961) demonstrated an increasing incidence of diabetes with increasing parity.

There seems to be a great deal of disagreement as to the significance of abnormal glucose tolerance during pregnancy. Gross (1962) claimed that the difficulties experienced by a pregnant diabetic such as recurrent abortions, increased incidence of stillbirths and neonatal deaths are also experienced by individuals who have impaired carbohydrate tolerance during pregnancy. On the other hand, O'Sullivan (1961) and other workers have reported high incidence of abnormal OGTT in normal pregnant patients.

As regard to treatment of pregnant patients with abnormal glucose tolerance, there is no general agreement towards instituting diet or small doses of insulin depending on the degree of abnormality. However, O'Sullivan et al (1966) have shown that when these patients are treated, they tend to produce average sized infants and the perinatal mortality was significantly reduced.

The significance of abnormal glucose tolerance during pregnancy in predicting the future possibility of developing diabetes mellitus has also been studied by O'Sullivan et al (1971). In a follow-up of 603 patients with indication of glucose tolerance testing and who were found to have abnormal tests in pregnancy, one-third had developed diabetes mellitus 15 years later. It is interesting to follow-up the eleven patients in this series who either showed abnormal OGTT, IVGTT or both in 15 years from now. Perhaps one could then comment on the validity of each type of glucose tolerance test.

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The Surgical Management of Ptosis

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Introduction

THERE ARE two main types of ptosis, congenital and acquired. Congenital ptosis is due to hypoplasia of the levator palpebrae superioris muscle. The superior rectus muscle arises from the same mesodermal mass as the levator muscle and congenital ptosis associated with ipsilateral superior rectus palsy is not uncommon. The causes of acquired ptosis are multiple. The majority of cases with congenital ptosis and selected cases of acquired ptosis are amenable to corrective surgery.

This paper is a study of the surgical management of ptosis in the Eye Department, University Hospital. 22 consecutive cases were assessed and operated by the author between January 1973 and March 1976. Both main groups of ptosis, the congenital and acquired were operated upon. 19 cases (86.4%) were congenital and 3 cases (13.6%) acquired. Unilateral congenital ptosis accounted for 17 cases. 2 patients with unilateral ptosis had ipsilateral superior rectus palsy. One had Marcus Gunn jaw-winking syndrome with superior rectus palsy. (Figure 5). In this synkinesis syndrome, the ptosis was eliminated and over-corrected when the patient opened his mouth (Figure 6) or moved his jaw to the opposite side (Figure 7). There were two bilateral cases (Table I). In the acquired group of 3 cases, 2 were due to traumatic third nerve palsy and one was a chronic progressive external ophthalmoplegia (Table II). One patient with traumatic third nerve palsy had the injury at the age of four and the eye was amblyopic. The other patient had bilateral third nerve palsy after a head injury.

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Table I

Congenital Ptosis

Unilateral	
With normal superior rectus	14
With superior rectus palsy	2
Marcus Gunn jaw-winking	1
Bilateral	
With normal superior rectus	2
	19

Table II

Acquired Ptosis

Third nerve palsy (traumatic)	2
*C. P. E. O.	1
	3

*Chronic progressive external ophthalmoplegia

Assessment of Ptosis

The important aspect in the surgical management of ptosis is the reliable preoperative evaluation of the patient. The patients were assessed on the following criteria:-

i) The type of ptosis, congenital or acquired, was determined.

ii) Unilateral or bilateral ptosis was noted.
iii) Measurement of ptosis was done in the primary position.
iv) The position of the eyelid margin to the pupil indicated the degree of lid droop. Amblyopia of a ptotic eye, though the pupil is completely covered, is never due to ptosis per se but to an associated factor such as ametropia or squint.
v) The presence of a lid fold indicated at least some degree of levator function.
vi) Levator muscle function is measured by the amount of lid excursion from looking down and then looking up, the frontalis action being eliminated by pressure on the brow by the observer's thumb. Normal levator function is 15mm or more.
vii) Frontalis muscle adds another 4mm to 6mm of lift and is important for brow suspension operation.
viii) The function of the extraocular muscles were noted. Superior rectus palsy with congenital ptosis is not uncommon.
ix) The orbicularis muscle is responsible for lid closure and paresis will result in or aggravate lagophthalmos.
x) The synkinesis syndrome must be looked for. A Marcus Gunn jaw-winking syndrome can be easily missed.
xi) Bell's phenomenon was noted. Its absence forewarns of exposure keratitis in lagophthalmos.
xii) The presence of corneal sensation was recorded.
xiii) Preoperative photographs were taken for record purposes. A study of the photographs may reveal information missed on earlier examinations.

Overall, the congenital group was easier to assess than the acquired.

Degree of Ptosis

The degree of ptosis was assessed as mild, moderate or severe, based on the amount of droop of the eyelid or the function of the levator muscle. A lid droop of 2mm or less was considered mild, 3mm moderate and 4mm or more severe. Ptosis with levator function of 8mm or more was considered mild, 5mm to 7mm moderate and 4mm or less severe. (Beard, 1969). (Table III).

Choice of Operation

The choice of operation was determined by the pre-operative evaluation, especially the type and degree of ptosis. For the congenital group of patients with severe and moderate ptosis, the operation of choice was levator resection. The acquired cases had absent or minimal levator action and suspension operation was performed.

Table III

Degree of Ptosis

Degree	Levator Function
Mild	8mm or more
Moderate	5mm to 7mm
Severe	4mm or less

Type of Operation

For a levator resection I have preferred the conjunctival approach of Blascovics (Blascovics, 1923) as I find this procedure simpler. I have no difficulty in resecting up to 20 mm of levator muscle with the posterior approach. I have used the anterior or skin approach for reoperation of an undercorrection. I find it useful to quantitate the amount of levator muscle resection. It is advisable to err on the radical side with levator resection in congenital ptosis as overcorrection is less common. For the suspension operation, I have preferred the Fox's brow suspension operation with autogenous fascia lata (Fox, 1966).

Analysis of Operated Patients

In 10 patients with severe congenital ptosis, levator resection of 18mm to 20mm was done with tarsectomy of 2mm. In 8 patients with moderate ptosis, levator resection of 16mm to 17mm was done with tarsectomy of 2mm. The patient with Marcus Gunn jaw-winking syndrome had levator excision of 20mm followed by brow suspension at the same operation.

The 3 acquired cases had severe ptosis. One patient with third nerve palsy had no levator function while the other had 1mm function. The chronic progressive external ophthalmoplegia had 1mm function. Fox's brow suspension operation was done for each of these cases (Table IV). The patient with chronic progressive external ophthalmoplegia had the other lid lifted few years ago in another hospital. The case with bilateral traumatic third nerve palsy had only one lid lifted to avoid diplopia.

Lid Folds

With the Blascovics operation, the ptosis can be corrected either with or without a lid fold. In the congenital group, superior lid folds were created in unilateral cases, only when a lid fold was present in the fellow upper lid. In the bilateral cases, lid

Table IV

Analysis of Operated Patients

Type	Degree	No.	Operation	Amount
Congenital	Severe	10	Levator resection	18mm - 20mm
			plus	
			Tarsectomy	2mm
	Moderate	8	Levator resection	16mm - 17mm
			plus	
			Tarsectomy	2mm
	Marcus Gunn Jaw-winking	1	Levator Excision	20mm
			plus	
			Fox's brow suspension	
Acquired	Severe	3	Fox's brow suspension	

folds were created in both upper lids. A lid fold was an invariable accompaniment with suspension operation. With bilateral ptosis it is preferable to do both lids at one operation. In ptosis with associated muscle palsy, the ptosis and squint were corrected at separate operations.

Results

In the congenital group of 19 patients, 13 had good results with symmetry of the palpebral apertures (Figures 1 to 4). 6 patients had undercorrection. (Table V). Only one patient with undercorrection was reoperated upon; the reoperation was done by the anterior approach. No reoperation was done for the rest of the undercorrected cases as the patients were satisfied with the cosmetic improvement. The patient with Marcus Gunn jaw-winking syndrome did well after the operation. The synkinesis was eliminated and the ptosis satisfactorily corrected. (Figures 5 to 10).

Complications

In the congenital group, 5 patients developed complications. All the complications were managed satisfactorily. 3 patients had lagophthalmos with exposure keratitis. A Berke's levator tenotomy (Berke, 1957) was done in one of the patients and this reduced the lagophthalmos to a manageable proportion. The other two cases were not severe and had good Bell's phenomenon. They were treated medically with artificial tears and advised to tape their lids at night. In all cases the exposure keratitis cleared in time due to development of resistance of the cornea to drying, without permanent reduction in visual acuity. 2 patients had conjunctival prolapse. One needed surgical reposition but the prolapse in the second case cleared spontaneously. Partial loss of eyelashes occurred in the patient who had levator tenotomy. This was left alone. There were no complications in the 3 cases of acquired ptosis (Table VII).

Table V

Results

Congenital Ptosis	19
Good result	13
Undercorrected	6
Overcorrected	0

Table VI

Results

Acquired Ptosis	3
Satisfactory Result	3

Discussion

Congenital ptosis is much easier to evaluate than the acquired. In congenital ptosis, an effort should be made to quantitate the amount of levator resection with the degree of ptosis. If there is doubt to the amount of resection, a larger resection is advised as overcorrection is less common in

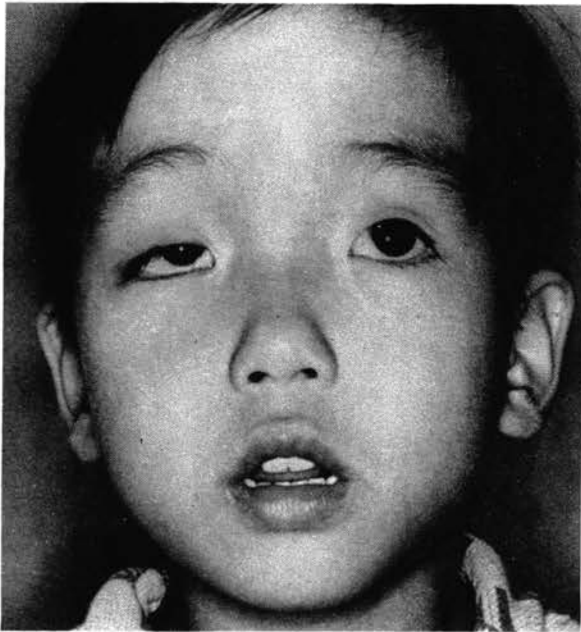

Figure 1
Preoperative photograph of child with right moderate congenital ptosis.

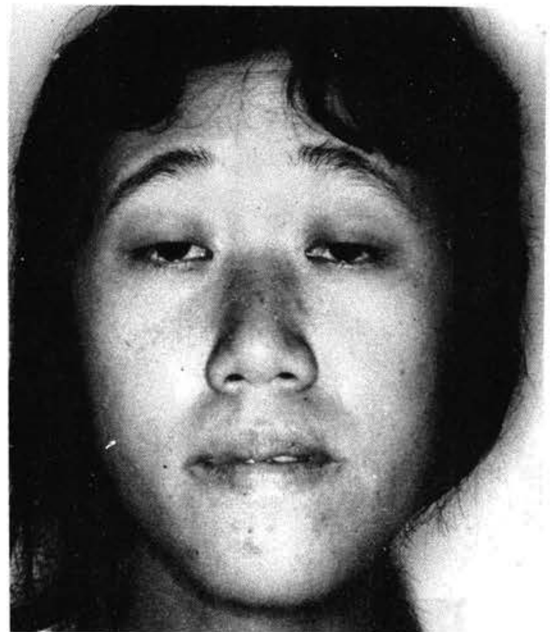

Figure 3
Bilateral severe congenital ptosis.

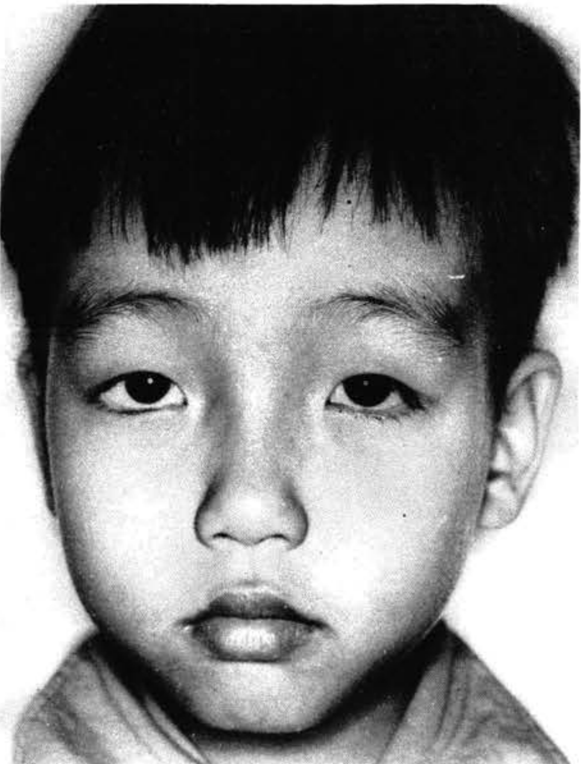

Figure 2
After right Blascovics operation with good result.

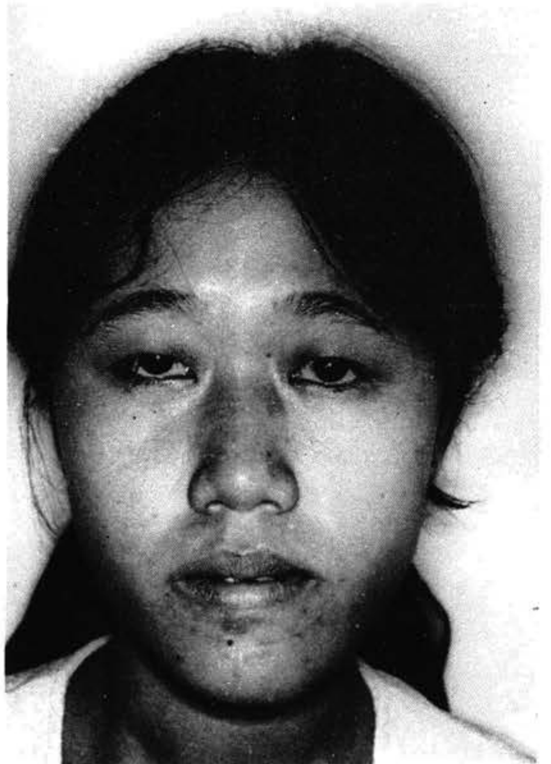

Figure 4
After bilateral Blascovics operation.

Table VII

Complications

Congenital	
Lagophthalmos with exposure keratitis	3
Conjunctival Prolapse	2
Partial loss of eye lashes	1
Acquired	
Complications	Nil

congenital ptosis (Beard, 1966). Acquired ptosis is more difficult to assess. Each case must be considered on its own merits and the general rules that apply in the treatment of congenital ptosis do not apply in the acquired. For the same degree of ptosis, the amount of levator resection required is less than that for congenital ptosis. Consequently, it is easier to overcorrect acquired ptosis. The levator muscle may be resected by the anterior skin-approach, the Everbush operation or its modifications (Leahey, 1953; Johnson, 1954; Berke, 1959;

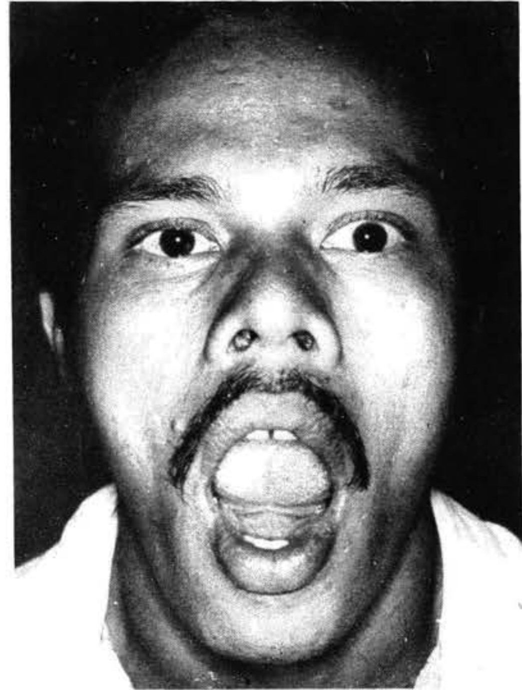

Figure 6
Pre-op. **Synkinesis is obvious when left ptosis becomes over-corrected on opening mouth.**

Figure 5
Pre-op. **Patient with Marcus Gunn jaw-winking syndrome showing left moderate ptosis.**

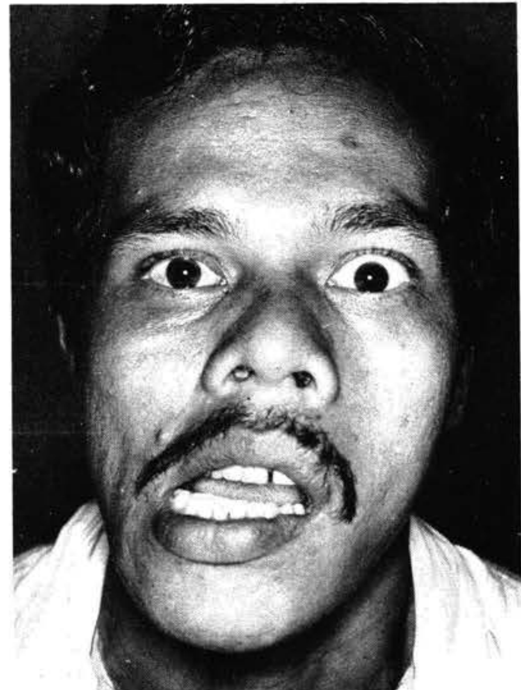

Figure 7
Pre-op. **Left ptosis overcorrected on moving jaw to opposite side.**

Mustarde, 1968) or by the posterior conjunctival-approach of Blascovics. Each approach has its advantages and disadvantages. With the anterior approach it is easier to get more muscle and a lid fold is invariably created. In Chinese patients with unilateral ptosis and absent lid fold on the contra-suspension operation is done as a second procedure. Beard (1969) advised bilateral suspension operation as a primary procedure for severe bilateral congenital ptosis if the patient is reluctant to undergo a second lateral lid, it is necessary to use the posterior approach to avoid creating an unwanted lid fold.

Levator resection is the operation of choice for moderate congenital and acquired ptosis and also for severe congenital ptosis. For minimal ptosis, when the levator function is 10mm or more, the Fasanella-Servat operation (Fasanella and Servat, 1961) or its modified form (Fox, 1975) can be performed. This operation is mainly a tarsectomy rather than a levator resection. For severe acquired ptosis, the suspension operation is indicated. For severe unilateral or bilateral congenital ptosis with levator function of 4mm or less, levator resection is still the operation of choice. If this fails, a

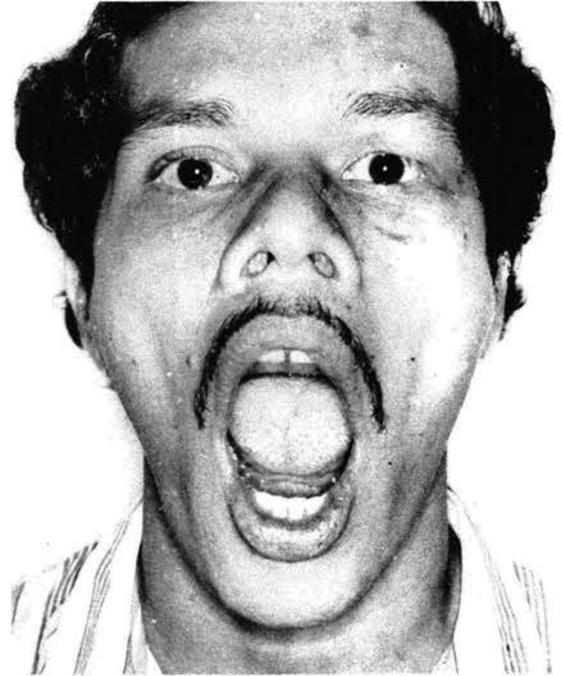

Figure 9
Post-op. **Synkinesis eliminated when patient opens mouth; left upper lid remains in same position.**

Figure 8
Post-op. **After levator muscle excision with Fox's sling operation in left upper lid.**

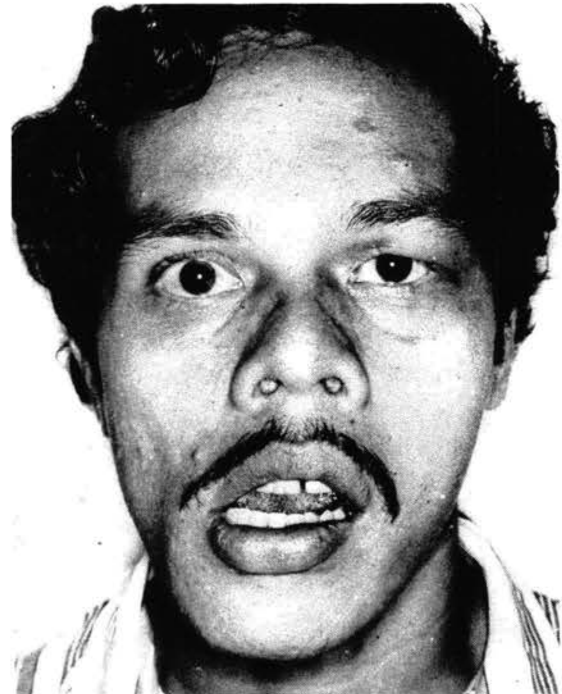

Figure 10
Post-op. **Synkinesis eliminated when patient moves jaw to opposite side.**

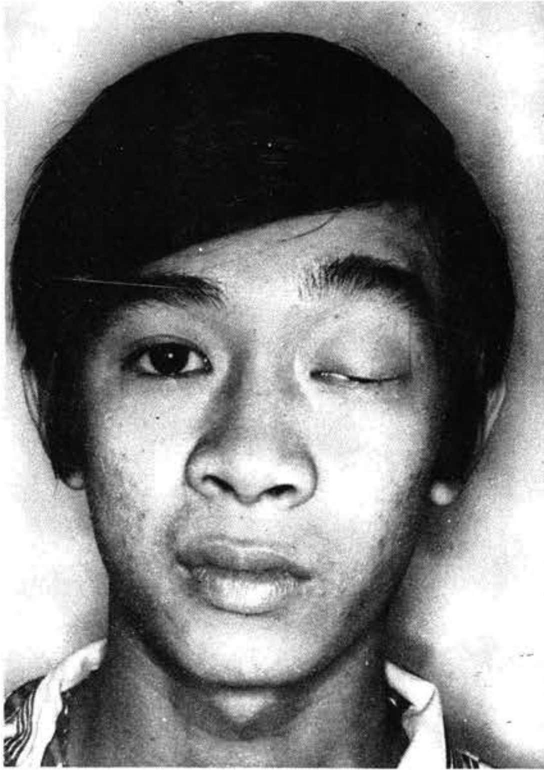

Figure 11

Left traumatic third nerve palsy with ptosis (acquired). Left eye has poor vision (amblyopia).

operation. Suspension operation from the frontalis muscle can be done with autogenous fascia lata (Beard, 1965) or with silicone strip (Tillett and Tillett, 1966). A suspension operation has the disadvantage that though the appearance is satisfactory in the straight ahead (primary) position and on looking up, there is marked lid lag on looking down and this would result in asymmetry for unilateral cases. For bilateral suspension operation, as lid lag occurs in both upper lids, symmetry is present and the result is acceptable. Beard (1965) had advised bilateral suspension for unilateral ptosis by excising the levator muscle in the normal lid to make it ptotic and then slinging both the upper lids. Callahan (1972) suggested placing a sling in the normal lid as well as the ptotic lid without excision of the levator muscle in the normal lid, to achieve the same result. In unilateral third cranial nerve palsy when the affected eye is amblyopic, ptosis correction can be performed. If a lid suspension is indicated because of absent or minimal levator function, a unilateral and not bilateral lid suspension is the operation of choice. This is because the palsy of the associated muscles would prevent symmetry in all directions of gaze. Unilateral third nerve palsy is one of the few instances when only unilateral lid suspension need be performed (Beard, 1973).

Summary

An analysis is made on 22 consecutive and operated cases of ptosis. 19 cases were congenital and 3 acquired. The choice of operation was determined by the preoperative evaluation. Those with severe and moderate congenital ptosis had levator resection. The patient with Marcus Gunn jaw-winking syndrome had levator excision followed by brow suspension at the same operation. Suspension operation was done for the 3 cases of severe acquired ptosis. The majority of congenital cases achieved good results. The acquired cases had satisfactory results. Few complications occurred and they were managed satisfactorily.

Acknowledgement

I would like to express my gratitude to Professor S. Chandran for his guidance, Dr. M. Vijendran for referring the patient with Marcus Gunn jaw-winking syndrome, the Medical Illustration Department, University of Malaya, for preparing the photographs and Mrs. T.C. Lai for secretarial assistance.

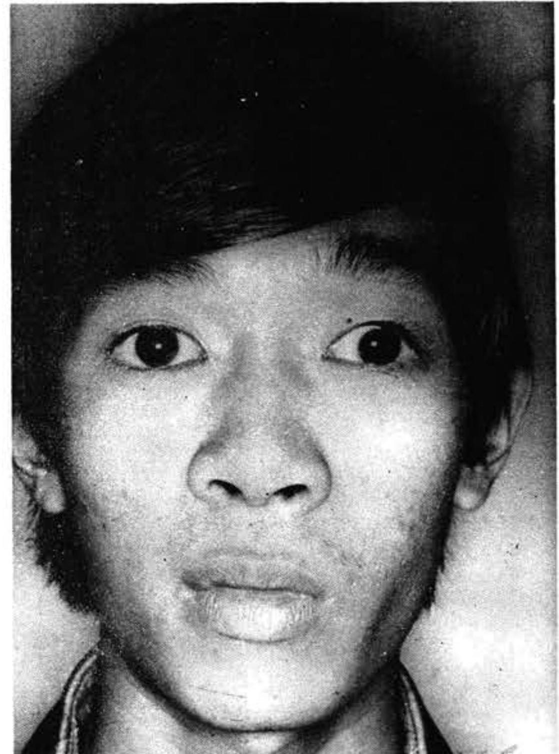

Figure 12

After Fox's suspension operation with autogenous fascia lata, in left upper lid.

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Ascending Cholangitis Complicated by Pyogenic Liver Abscess

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THE DEVELOPMENT OF single or multiple liver abscesses is a common complication of ascending cholangitis. Many end fatally. Despite repeated reports, this is still often missed because the signs and symptoms of liver abscess do not differ greatly from that of cholangitis. Along with this case report, a review of the current line of management is presented.

Case Report

The patient, a 60 year old Chinese man, was returning home after a banquet when he suddenly had chills and fever, and pain in the right hypochondrium. There was no similar past history. He does not drink. He had pulmonary tuberculosis 35 years previously, treated with left sided artificial pneumothorax. He was ill, febrile (temperature 38°C), pale and jaundiced. The liver was 7 cm below the right costal margin, and tender. Pulse rate was 84/min. and blood pressure 120/70 mm Hg. Other systems were normal. Urine was positive for albumin and bilirubin. Haemoglobin 10.0 gm/100 ml, total white count 47,800/ul (neutrophils 94%), erythrocyte sedimentation rate 108 mm, serum albumin 2.5 gm/100 ml, globulin 5.0 gm/100 ml, serum bilirubin 10.6 mg/100 ml (conjugated 3.8 mg/100 ml, unconjugated 6.8 mg/100 ml), serum alkaline phosphatase 330 I.U./litre (normal values 21-91 I.U./litre), blood urea 154 mg/100 ml, plasma creatinine 4.5 mg/100 ml.

A diagnosis of ascending cholangitis was made, and he was given parenteral ampicillin, vitamin K and intravenous fluids. His condition deteriorated. He was toxic and febrile (temperature 39°C), pulse rate 114/min. The abdomen was grossly distended. Bowel sounds were sluggish. The right hypochondrium was markedly guarded. Total white count 45,000/ul (neutrophils 89%). Laparotomy was performed, but no cholecystitis or gall stone was found while the bile duct seemed patent. Liver biopsy showed cholangitis. Blood culture was negative. He was given gentamicin and erythromycin (he developed hypersensitivity to ampicillin), and later kanamycin was used instead of gentamicin.

His general condition improved. Jaundice and right hypochondral pain subsided. Serum bilirubin 1.1 mg/100 ml (conjugated 0.8 mg/100 ml, unconjugated 0.3 mg/100 ml), total white count 11,300/ul (neutrophils 71%).

However, progress was slow. Appetite remained poor. Low grade fever persisted. Liver was enlarged but not tender. Chest radiology showed elevation of the right hemidiaphragm. Liver scan showed a large area of poor uptake in the posterior aspect of the right lobe. On needling this area, 500 ml of foul smelling yellowish pus was aspirated. Smear showed gram positive cocci in clusters, and culture grew staphylococcus aureus in both aerobic and anaerobic media. He was given cloxacillin and cephaloridine. He improved.

Discussion

Sudden pain in the right hypochondrium, with chills, fever, jaundice and polymorphonuclear leucocytosis make the diagnosis of acute cholangitis (3); a condition associated with high mortality and morbidity. 7 of the 15 cases of acute suppurative cholangitis reported by Haupert et al (4) died. Salk et al (2)

reported 8 deaths in a series of 36 cases of acute cholangitis.

The most frequent complication of cholangitis is septicaemia, progressing to hypotension and death (2, 3, 4). Early diagnosis and rigorous treatment with antibiotics are essential to avert this. Operation is mandatory when septicaemia and hypotension are present et al (2,3,4). In the series by Dow etal(3) and Haupert et al (4), all such cases died when treated non-operatively.

Another common complication is pyogenic liver abscess. 5 of the 10 cases of cholangitis reported by Dow et al(3) had evidence of liver abscess, and 2 of the 7 deaths in Haupert's series (4) were found at autopsy to have miliary abscesses.

Recent reviews (5, 7, 8 and 9) on pyogenic liver abscess show a changing pattern in the aetiology, and an increase in the incidence of pyogenic liver abscess secondary to cholangitis (7). Ascending cholangitis is now the leading cause of pyogenic liver abscess, ranging from 40 to 50% (5, 7, 8 and 9). Other sources include spread from the hepatic portal vein and the hepatic artery.

Pyogenic liver abscess usually presents as a short illness with fever and chills, jaundice, and tender enlarged liver; symptoms not unlike those of cholangitis. There is frequently polymorphonuclear-leucocytosis, elevated serum alkaline phosphatase, hyperbilirubinaemia, and hypoalbuminaemia. Useful radiological findings are elevation of the hemidiaphragm and pleural effusion, more commonly on the right. The abscess may be single or multiple, and the solitary liver abscess is often detected on liver scan (9).

There has also been a change in the pattern of organisms isolated (5, 6, 7 and 9). Gram negative organisms, particularly E. coli, have predominated since the introduction of antibiotics. Anaerobic organisms have also been increasingly isolated, though streptococcal and staphylococcal organisms continue to be cultured. Various combinations of antibiotics are used, and a change of bacterial flora during the course of antibiotic therapy often necessitate a change in chemotherapy.

Pyogenic liver abscess is almost uniformly fatal in those in whom the disease is not diagnosed and appropriately treated (5, 9). The high mortality has been attributed to failure or delayed recognition of the illness, the inability to obtain adequate surgical drainage, the failure to perform adequate bacterial studies, and the lethal nature of the underlying disease process (9).

Treatment must be instituted immediately, and involves a combination of antibiotics and drainage. Solitary liver abscesses are more easily drained and carry a more favourable prognosis (5, 8, 9). Drainage of the abscess may be done either by percutaneous needle aspiration (10) or by open drainage or aspiration (11). In a series of 61 cases reported by Joseph et al (8) there were 4 deaths out of 26 cases with drainage of the abscess, whilst 30 cases out of 35 cases not drained died. McFadzean et al(10) successfully treated 14 cases of solitary pyogenic liver abscess by close aspiration and antibiotics instilled into the cavity.

Conclusion

Both ascending cholangitis and pyogenic liver abscess carry grave prognosis. The presence of cholangitis should be suspected in any middle aged person presenting with chills and fever, jaundice, right hypochondrial pain and a polymorphonuclear leucocytosis. Culture and sensitivity studies must be made and appropriate antibiotics administered, together with treatment of shock and fluid deficit. In those failing to respond to these measures, laparotomy is mandatory (2) for the purpose of drainage of the common bile duct. An operative cholangiogram should be done. If the improvement following treatment is not satisfactory, the presence of a pyogenic liver abscess should be suspected.

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Carbamate Insecticide Poisoning

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Introduction

INSECTICIDES are widely used in this agricultural state of Kelantan where Tobacco is being grown extensively. The common insecticides available are organophosphorous compounds (e.g. Malathion), chlorinated hydrocarbons (e.g. Endrin) and Carbamate (e.g. Temik). In the last two years (1974-1975) we have had 7 children admitted to the Paediatric Department with anticholinesterase insecticide poisoning and one child was brought dead to the Casualty Department. All the seven children admitted were successfully treated and were sent home and followed up.

Modes of Accidental Poisoning:

1) The first two patients were fed with insecticide accidentally by the mother who mixed up the bottle of Antepar which she took from the Peripheral Clinic. One child died before reaching the Casualty Department.
2) Three children took 'nisan' a home made toffee with coconut scraping prepared by the elder girl who accidentally added insecticide to the toffee as flavouring agent.
3) Father prepared rice from container contaminated with insecticide used for tobacco plant. Father and son were admitted for poisoning.
4) The other two cases are presented in detail.

CASE REPORT

Case 1

A seven month old Malay female was admitted to Paediatric Department with history of sister having administered insecticide powder used for rose plants at 1 p.m. Patient then became drowsy and slightly blue around the mouth when mother breast fed the child. On admission to the ward at 2.40 p.m. patient had pin-point pupils, muscle twitching, excessive secretions and spontaneous evacuation of bladder and bowels. Apex Beat 140 per min., respiratory rate 36 per min., temperature 99.4°F, B.P. 90/60 mm hg., cardiovascular system – normal, respiratory system – vesicular breath sounds, abdomen – exaggerated bowel sounds. Nasogastric tube was passed and stomach contents aspirated and bowel wash was done. I.V. 1/5 Saline with Dextrose Water was set up and a provisional diagnosis of anti cholinesterase insecticide poisoning was made. Injection Atropine (4 ampules each 0.6 mg) was administered till pupils were dilated and patient was transferred to I.C.U. Pupils were re-examined and found to be constricted and a further 7 ampules were administered till pupils were dilated. At 5.15 p.m. patient developed fits (probably due to Hypoxia) and a further 2 ampules of Atropine administered till pupils dilated. Injection Diazepam 2 mg I.V. (Valium) was given to control the fits.

As the patient was cyanosed, she was intubated and put on IPPR. By 6.50 p.m., it was confirmed the insecticide was Temik, a carbamate. From then Atropine was administered at intervals of 10-20 mins till 6.50 a.m. following day using pupils as indicator and patient consumed 167 ampules. Patient was weaned off the respirator and extubated at 9.00 a.m. the next day. Patient was covered with antibiotics. Child recovered uneventfully and was discharged on the 6th day.

Case 2:

A nine year old Malay female was admitted to the Paediatric Department at 6.00 p.m. with history of vomiting twice in the morning at 7.00 a.m. and also complained of giddiness. At about 12 noon, she complained of giddiness following which she became unconscious. No history of fever, fit or diarrhoea. The previous day, the child retired to bed perfectly normal in a relative's house at a tobacco farm.

Patient was investigated for coma because no proper history was available. Investigations were sent and patient was reviewed again at 9.00 p.m.

On examination she had a peculiar odour from the hair and mouth. Pupils were pin point and patient was in Coma IV. Apex Beat 120/per min, regular. B.P. 130/60 mm hg, Respiratory Rate 44 per min. Frothing from the mouth, twitching of muscles all over the body and patient spontaneously opened the bowels and the bladder. Cardio vascular system – normal. Respiratory system – crepts medium to coarse with transmitted sounds. Abdomen – bowel sounds exaggerated. C.N.S. – Coma IV, pin point pupils. Jerks both sides elicited. Plantars were flexor.

Investigations:

Hb 13.2 gms, TW 17,200 per cu. mm, DC P91, L6, M2, E1, Platelet cound 450,000 cu. mm. BF/MP – negative. PCV 41%. Blood Urea 40 mg %, RBS 184 mg %. Serum Electrolytes, Sodium 136 mEq. Potassium 4.2 mEq. Chloride 100 mEq. CSF – clear and colourless, Sugar 136 mg%, Total Protein 30 mg%, Globulin – negative, Direct smear – no organisms. Culture – no growth.

Treatment:

Provisional diagnosis of anticholinesterase drug poisoning was made. Nine ampules of (0.16 mg per ampule) Atropine was given I.V. until pupils were dilated. Mouth secretions and lung findings disappeared in 15 minutes. Patient was transferred to I.C.U. At 9.05 p.m. pupils were pin point again and 5 ampules of Atropine were given till pupils were dilated. Patient was administered 2 ampules I.V. Atropine every 10-20 minutes using pupils as indicator till 2.00 p.m. the next day. Patient recovered uneventfully and was discharged on the 7th day. She was given a total of 104 ampules of Atropine.

Discussion:

All seven patients admitted to the Paediatric Department were accidental poisoning and NONE SUICIDAL. Children below 10 years are admitted to the Children's Ward and the youngest child was 7 months old. Mode of poisoning in Case 2 was interesting because this child with her friend applied carbamate insecticide to the scalp as treatment for HEAD LOUSE. Her friend washed her hands before dinner whereas she did not. This history was elicited from the grandmother around midnight and confirmed by the child later. It is known that malathion $\frac{1}{2}$% in alcohol is used for delousing (BMJ 1975) but how the Kampong folks started to use insecticide for Head Louse is not known.

Atropine was used successfully in all cases without any problem using pupils as index. In the two cases presented, the 7 months old baby consumed 105.6 mg and the 9 year-old 62.4 mg of Atropine. In the treatment of anti-cholinesterase poisoning herioc doses of Atropine have to be used (Goodman & Gillman 1970).

Cholinesterase activity estimation was not done in any of the patients because it is not available locally and diagnosis does not depend on it. (Prof. Ganendran).

The two patients presented were confirmed as Carbamate poisoning. In case 1, it was Temik, an insecticide used for rose plants. For Temik (2 methyl 2 propionaldehyde 0 (methyl carbamoyl) oxine) the antidoe as suggested on the container is Atropine only. 2 PAM and other cholinesterase inhibitors are contraindicated. Even in Organophosphorous poisoning 2 PAM should be considered only after Atropine. 2 PAM is also of no value after 24 hours of poisoning and certainly not beyond 48 hours (Mitchell R. Zavon 1974). The value of 2 PAM in all organophosphorous insecticide poisoning is doubted. Other drugs contraindicated in treatment are opiates and other cholinesterase inhibitors.

The Most Commonly Used Carbamate Insecticides (Mitchell R. Zavon 1974)

Aldicarb (Temik^{R})
Aminocarb (Matacil^{R})
Aprocarb (Baygon^{R})
Carbaryl (Sevin^{R})
Methomyl (Lannate^{R}, Nudrin^{R})
Zectran^{R}

Summary:

Signs of poisoning which were useful in diagnosis were 1) pinpoint pupil 2) excessive secretions 3) generalised muscle twitching 4) spontaneous evacuation of bowels and bladder, which were all due to Parasympathetic over activity.

Two cases of Carbamate poisoning are described. The antidote is Atropine.

Tobacco farming is common in the East Coast States and as this insecticide is commonly used, carbamate poisoning should always be thought of in cases of suspected poisoning.

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Filariasis Survey at the Youth Training Centre in Dusun Tua, Selangor, Peninsular Malaysia

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INTRODUCTION

FILARIASIS is mainly a rural health problem in Malaysia. This disease due to *Brugia malayi* and *Wuchereria bancrofti* is endemic in the country. *B. malayi* is the predominant species that exists in both the periodic and subperiodic forms of which the latter is incriminated as a zoonotic agent. Endemic areas of *B. malayi* are found mainly in coastal fresh water open swampy areas and in riverine regions near swamp forests. *W. bancrofti* is seen mostly among the indigenous people and other inhabitants of remote rural areas.

Malaysia is in the process of tremendous land development schemes and youth training programmes. Up to the end of 1971, the Federal Land Development Authority had resettled 22,634 families in land schemes covering 460,000 acres. Another 250,000 acres would have been developed under the Second Malaysia Plan, 1971-1975 (*Malaysia Year Book*, 1973/74). Youth training programmes have been instituted to equip youths with technical, agricultural, and leadership skills. These two programmes have resulted in massive internal migrations and population movements in the country. As the majority of these migrants are recruited from the rural areas where filariasis may be endemic, there is the potential risk of spreading the disease among participants and also into the population around such areas. Because of this concern, a youth training centre in Dusun Tua, in an outlying district in Selangor State was surveyed for filariasis. The objective was to assess whether there was any filariasis infection among the trainees and also to determine whether mosquito vectors were present to pose a potential threat of spreading the infection to other recruits within the Centre and also into the surrounding areas. The mukim (sub-district) of Ulu Langat, where Dusun Tua is situated, has a known mean microfilarial rate of 4.8% (unpublished data, Institute for Medical Research). The possibility of filarial infection being transmitted from the surrounding areas into the Centre is therefore present.

MATERIALS AND METHODS

Dusun Tua Youth Training Centre

Surveys were carried out at the Youth Training Centre in Dusun Tua during the period of 1973-1974. The Centre is situated in a typical rural area along the Sungei Langat valley about 16 miles south of Kuala Lumpur, in Dusun Tua, Ulu Langat District of Selangor State (Figure 1). The Centre covers an area of 64 acres bounded on the west and south by the river and to the east and north by swamps and agricultural land. The Centre was established in 1966 and conducts residential course for periods ranging from 6 months to 2 years for youths, aged 15-29 years.

The Centre has its own medical unit with a sick bay of 35 beds. Medical and health problems are looked after by a full-time medical officer and other ancillary staff. Recruits are from all over Malaysia and to date 13,000 trainees have passed through the centre.

Surveys

All newly admitted recruits to the Centre in 1973-74 were screened, within two weeks of arrival

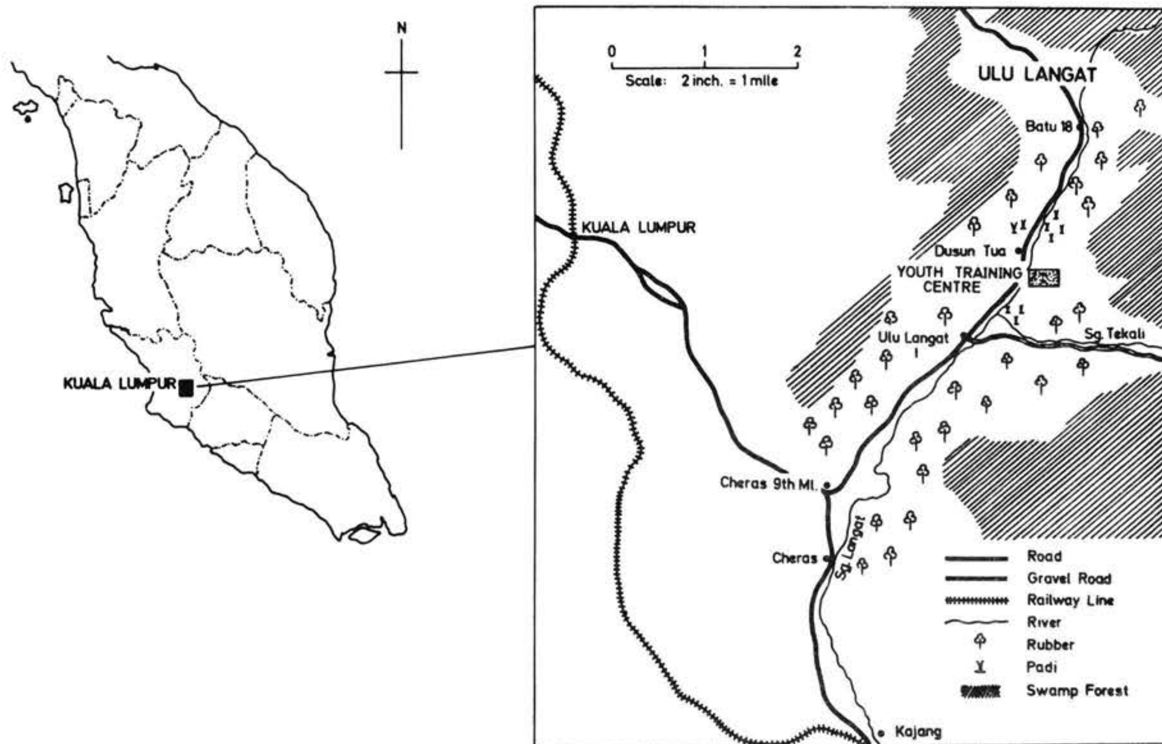

Figure 1

Map of Peninsular Malaysia showing location of filariasis survey at Dusun Tua.

for microfilaremia using a 60-mm³ thick blood smear from finger pricks. All surveys were carried out at night after 2000 hours. Blood films were dried overnight and stained with dilute Giemsa (1 ml in 100 ml of phosphate buffered water at pH 7.2 for 1 hour).

A full clinical history was taken and symptoms of filarial infections were asked for. A complete physical examination was also carried out on 1127 of the recruits screened.

Entomological studies were also performed by using bare leg catches and human bait traps. Studies were carried out over 25 nights during a period of 7 months. Mosquitoes caught were identified and dissected for evidence of filarial infections. Trappings were done within the Centre as well as in the surrounding areas. Human bait net traps were operated by two men at two sites in the camp from dusk to dawn. Mosquitoes were collected at intervals of two hours. Human bare leg catches were made at various sites inside the camp, with three men collecting from 1800-2100 hours at each site.

RESULTS

Blood Surveys

A total of 1733 recruits were screened. The average age of the recruits was 20.2 years with a range of 15-29 years. *B. malayi* infection was found in 63 (3.6%) of the recruits. The majority of the microfilarial carriers had low counts (Table 1) with a mean density of 41.3 microfilariae/60 mm³ peripheral blood. Thirty-four out of 63 (54%) had counts below 20 microfilariae/60 mm³.

Clinical assessment

A total of 1127 out of 1733 recruits were clinically assessed. Of these 17 out of 1079 (1.6%) without microfilariae and 1 out of 48 (2.1%) with microfilariae gave histories of intermittent fever suggestive of filariasis (Table 2). The difference between these two groups was not significant (Chi square = 0.0984; $0.8>P>0.7$). Similarly the difference in a positive history of recurrent lymphadenitis in both groups was not significant being 3 out of 48 (6.3%) and 53 out of 1079 (4.9%) respectively (Chi square = 0.0061; $0.95>P>0.9$).

Table 1

Distribution of microfilarial densities in 63 microfilarial carriers among 1733 recruits examined from the Youth Training Centre, Dusun Tua, Selangor, Peninsular Malaysia, 1973 – 1974

Age (years)	Microfilarial count/60 mm³ blood								Total positive	No. examined	% positive
	1–19	20–39	40–59	60–79	80–99	100–119	120–139	<140			
15–	–	–	–	–	–	–	–	–	–	3	–
16–	–	–	–	–	–	–	–	–	–	19	–
17–	1	1	2	–	–	–	–	–	4	191	2.1
18–	3	3	–	–	–	1	1	1	9	386	2.3
19–	8	3	1	1	1	–	–	2	16	343	4.7
20–	7	–	–	–	1	–	–	–	8	260	3.1
21–	6	2	–	–	–	–	–	–	8	179	4.5
22–	4	–	1	1	–	–	–	1	7	142	4.9
23–	–	2	–	–	–	–	–	–	2	103	1.9
24–	2	–	–	–	–	–	–	1	3	53	5.7
25–	2	–	–	–	–	–	–	1	3	28	10.7
26–	–	–	–	1	–	–	–	–	1	16	6.3
27–	1	–	–	–	–	–	–	–	1	7	14.3
28–	–	–	–	–	–	–	–	–	–	2	–
29	–	1	–	–	–	–	–	–	1	1	100
Total:	34	12	4	3	2	1	1	6*	63	1733	3.6%

* One each with microfilarial count/60 mm³ of 174, 291, 306, 760 and two with 219 microfilariae/60 mm³.

Table 2

Clinical symptoms suggestive of filariasis in 1127 trainees, in Youth Training Centre, Dusun Tua, Selangor, Peninsular Malaysia, 1973

Microfilaremic state (No. of recruits)	Intermittent fever	Recurrent lymphadenitis				
		Cervical	Axillary	Inguinal-femoral	Total	%
Negative (1079)	17	10	12	31	53	4.9
Positive (48)	1	1	1	1	3	6.3
Total (1127)	18	11	13	32	56	5.1

Clinical evidence of lymphadenopathy was present in 56.3% of microfilaremic and 58.7% of amicrofilaremic recruits giving a mean of 58.6% (Table 3). For this purpose, an enlarged lymph node was one which was palpable and more than 1 cm. at its widest diameter. Again the difference seen in the two groups was not significant (Chi square = 0.2324; 0.7>P>0.5). Even when only enlarged inguinal-femoral lymph nodes were considered, the difference between the microfilaremic and amicrofilaremic patients was not significant (Chi square = 0.3430; 0.7>P>0.5).

No recruit had a history of genital symptoms nor any sign of genital involvement. Lymphoedema and overt elephantiasis was not seen in the 1127 recruits.

Entomological Studies

A total of 1311 female adult mosquitoes consisting of 121 *Aedes* (3 spp.), 2 *Aedomyia* (1 sp.), 17 *Anopheles* (6 spp.), 972 *Culex* (11 spp.), 198 *Mansonia* (4 spp.), and 1 *Uranotenia* sp. were caught in human bait traps. Of these 197 mosquitoes were *M. bonneae*, *M. dives*, *M. uniformis* and *A. barbirostris*, that are known vectors of *B. malayi* (Wharton, 1960). Of the 196 dissected, 127 were found to be parous. Only 2 *A. maculatus* mosquitoes were caught.

Of the total of 1453 female adult mosquitoes caught by bare leg catches, 532 were known vectors (*M. annulifera*, *M. bonneae*, *M. dives*, *M. indiana* and *M. uniformis*).

Of the combined total of 2764 female adult mosquitoes caught by bare leg catches and human bait traps, 2330 were dissected and 1172 were found to be parous.

Only 3 *C. gelidus* were found to be infected, one with infective larvae of *Setaria* sp., and 2 with other nematodes.

DISCUSSION

The survey among the recruits confirmed the presence of microfilarial carriers in the youth training scheme. 3.6% (63 out of 1733) of the trainees had *B. malayi* microfilaremia, more than half of them having low microfilarial densities (below 20 microfilariae/60 mm³ peripheral blood).

Clinical history did not show any difference between the recruits with and without microfilaremia. The proportion of those two groups giving a history of intermittent fever suggestive of filariasis was equal. Similarly histories of recurrent lymphadenitis occurred with equal frequencies in both groups.

The proportion of those having lymphadenopathy was similar in both the groups with and without microfilaremia. Edeson (1955) reported a significantly higher number of children in the age group 0-5 years in endemic areas with enlarged axillary lymph glands than those in non-endemic areas. As the presence of enlarged axillary glands was also frequent in filariasis free areas, he considered the enlargement of the lymphatic glands as valueless for the clinical diagnosis of filariasis. Among young children in Malaya, Turner (1959) found less than half of all the microfilarial carriers had palpable nodes and only 51% of all filarial patients with and without microfilaremia had enlarged nodes. He concluded that although simple enlargement of lymph nodes occurred in patients with *B. malayi* infection, it was not a consistent sign of early

Table 3

Types of lymphadenopathy in 660 among 1127 trainees examined in Youth Training Centre, Dusun Tua, Selangor, Peninsular Malaysia, 1973

Microfilaremic state (No. of recruits)	Lymphadenopathy							% of Total Patients examined
	Cervical	Axillary	Inguinal-femoral	Cervical & Inguinal-femoral	Axillary & Inguinal-femoral	Cervical, Axillary & Inguinal-femoral	Total	
Positive (48)	1	0	22	4	0	0	27	56.3
Negative (1079)	34	2	437	143	6	11	633	58.7
Total (1127)	35	2	459	147	6	11	660	58.6

infection. He further stated that the clinical characteristics of the nodes were not peculiar and other causes of simple enlargement of node could not readily be excluded.

Dondero *et al.* (1971) found 85% (11 out of 13) of the microfilaremic patients, 86% (25 out of 29) elephantiasis patients and 75% (6 out of 8) patients with lymphangitis with either or both inguinal and femoral lymphadenopathy compared to 25% (2 out of 8), of the group without the disease. In a later study, Dondero and Menon (1973) found 84% (45 out of 56) males with clinical filariasis or microfilaremia to have enlarged inguinal femoral lymph nodes compared to only 41% (46 out of 112) of those without microfilaremia or apparent disease. In our present study, 56.3% of the recruits with microfilaremia and 58.7% without microfilaremia had lymphadenopathy using the same criterion of enlarged nodes as that of Dondero *et al.* (1971). The difference between the two groups was not significant. No clinical evidence of genital involvement was seen in any of the 1127 recruits examined.

Mansonia bonneae, M. dives, M. uniformis, M. indiana, M. annulifera and *A. barbirostris,* known vectors of *B. malayi,* were caught in and around the Centre. *A. maculatus,* a known vector of the rural strain of *W. bancrofti,* was also caught there. Vector mosquitoes accounted for 36.6% (532 out of 1453) of those caught by bare leg catches and 15.0% (197 out of 1311) caught in human bait traps. None of the 2330 dissected mosquitoes was found to be infected with human filarial larvae although a *Culex gelidus* was found with an animal filarial parasite, *Setaria* sp.

The parasitological and entomological surveys have therefore shown that microfilarial carriers as well as known mosquito vectors are present in the Dusun Tua Youth Training Centre. Although the sub-district of Ulu Langat is known to have a mean microfilarial rate of 4.8%, the nearby villages adjacent to the Centre have not been surveyed. Even though most of the 63 microfilarial carriers had low microfilaremia with a mean density of 41.3 microfilariae/ 60 mm^3 but with the presence of known mosquito vectors there transmission in and around the camp is a possibility. However, no mosquito hitherto was found to be infected with human filarial parasites. It would be recommended therefore that routine examination of all recruits at entry should include a blood examination for microfilariae. Treatment of microfilarial carriers is necessary and perhaps it may be wiser to institute mass chemotherapy with diethylcarbamazine for all future new recruits.

SUMMARY

Mass population movements of people from endemic areas of filariasis involved in land development schemes will pose a potential risk of spreading the disease where vector mosquitoes are present. A survey on recruits, from endemic areas for residential training for periods of 6 months to 2 years at a youth training centre in Dusun Tua, Ulu Langat District, Selangor State, was conducted to determine whether this problem was present. It was found that 3.6% of the recruits had *B. malayi* microfilaremia and known vector mosquitoes were present in and around the Centre. Although no mosquito was found to be infected with human filarial parasites, there is a potential risk of spreading the infection in the locality concerned. It is therefore recommended that all new recruits should be examined for microfilaremia and treatment given to positive carriers. Perhaps mass chemotherapy with diethylcarbamazine should also be given to these recruits.

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Carcinoma Metastatic to the Iris

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THIS PAPER consists of a clinico-pathological study of a case of carcinoma metastatic to the iris. This particular case is of interest because of its unusual course in which the patient came in with eye complaints which was the result of a metastatic lesion from a bronchogenic carcinoma. The metastatic lesion in the iris was the first manisfestation of a silent primary tumour in the lung.

A Clinico-pathological Study

A 60 year old Chinese man was seen in Eye Clinic for the following complaints:

1. Redness of the right eye for 30 days.
2. Progressive blurring of vision of right eye after the onset of redness.
3. Whitish mass in right eye – growing gradually in size.

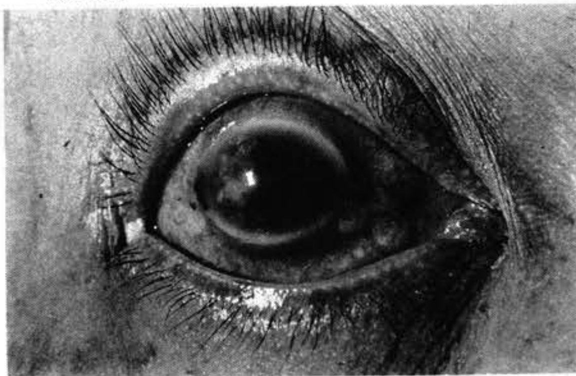

Figure 1
Whitish nodular vascular mass extending from the centre of the pupil to base of iris on temporal aspect, situated at the horizontal meridian.

Brief History

The patient first noticed redness of the conjunctiva about 30 days before the time of examination. Initially the redness was very mild, but became more obvious with time. There was no pain or eye discharge in the early stages. During the same period of the redness of the eye, the patient noticed abnormal colouration over the iris. It started as a white dot which gradually became larger. Associated with the progressive enlargement of the growth, there was progressive deterioration of the central vision. His right central vision according to him was as good as the left eye, had deteriorated markedly to a point of seeing objects vaguely at close distance. In the later stages as the whitish growth enlarged, the patient began to suffer mild pain and photophobia in right eye.

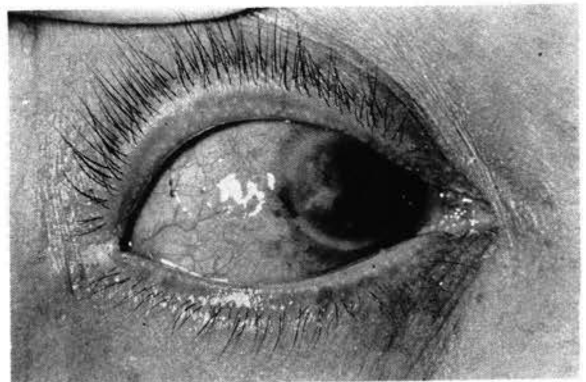

Figure 2
Showing the whitish nodular vascular mass.

Past History

Not been admitted to hospital before. No previous trauma to right eye. No history of vereneal disease or tuberculosis.

Personal History

Drinks alcohol occasionally. Smokes cigarettes for past 25 years – 15 to 20 cigarettes a day.

Clinical Findings

General conditiotisn safactory.

Clinical Findings in Right Eye:

1. Poor vision – VR.C.F. VL. 6/6
2. Whitish nodular vascular mass extending from the centre of the pupil to base of iris, on the temporal aspect, situated at the horizontal meridian from 7 o'clock to 10 o'clock position.
3. Redness – marked around the cornea.
4. Iridocyclitis – Keratitic precipitates and marked flare in aqueous. Pupil irregular with posterior synechiae.
5. Glaucoma – Tension by applanation

   Right eye – 56 mm.Hg.

   Left eye – 15 mm.Hg.
6. Hyphema and Rubeosis Iridis – Bloodish tinge of aqueous humour. Marked neovascularization of iris.

   Fundus – vaguely seen due to post-subcapsular lens opacity and small irregular pupil.

Routine Investigation

Hb. – 14.5 gm.%

TWDC – 7,600

P – 75%

L – 28%

M – 1%

E – 0%

Urine: Alb. – NIL

Sugar – NIL

Deposits – NIL

ESR – 20 mm./hr.

Blood for KT – Negative

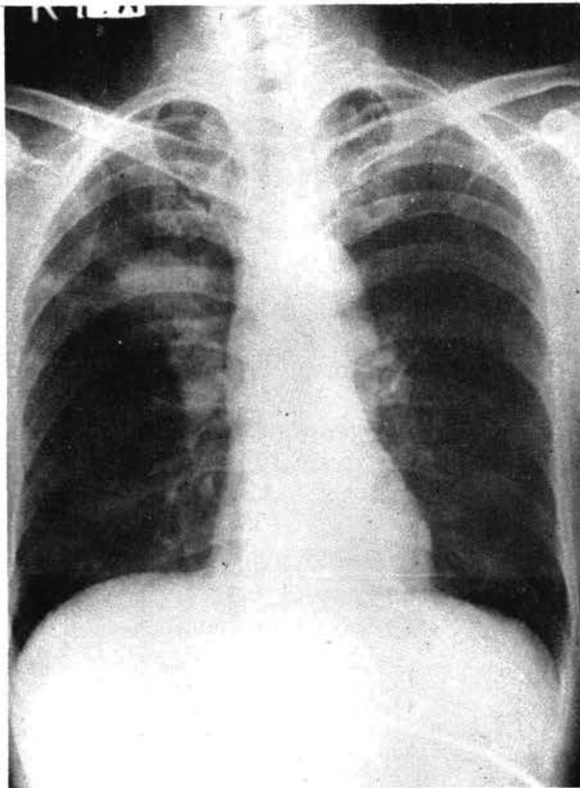

Figure 3

X'Ray Chest

Rounded mass with irregular outlines in posterior segment of the right upper lobe the mass extends into right hilum.

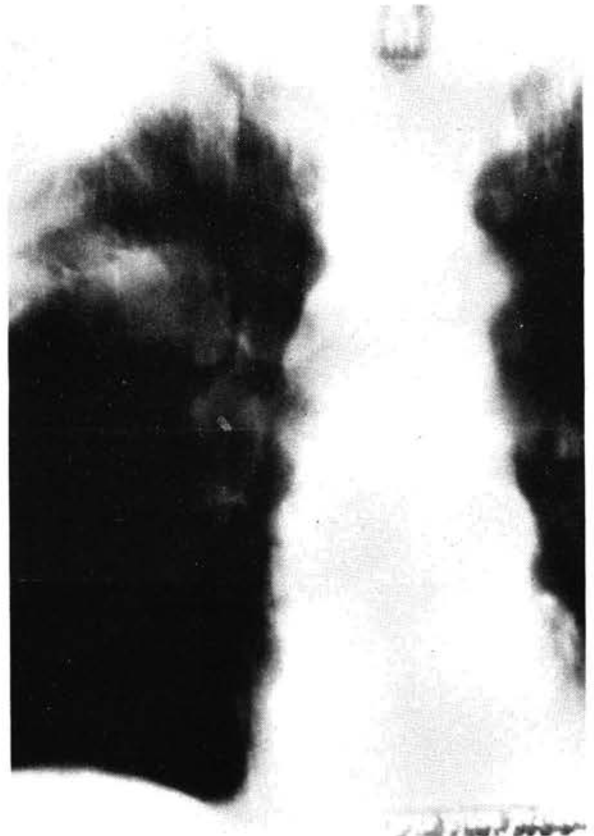

Figure 4

Tomogram showing the rounded mass.

X'ray Chest:

A-P Tomograms:- Rounded mass with irregular outlines in posterior segment of the right upper lobe. The mass extends into right hilum

The X'ray finding is suggestive of carcinoma of bronchus.

Provisional diagnosis of metastatic carcinomatous growth of the iris was made.

Medical Treatment prior to Surgery

The iridocyclitis was controlled by local steroid drops and gutt. Atrophine and secondary glaucoma controlled by oral diamox tablets.

Surgery

Complete excision of the growth in iris was done. The growth was excised from the pupillary margin right to base of iris. The area extends from the pupillary margin to base of iris from 7 o'clock to 10 o'clock position.

Histo-pathology

Sections from iris show small cell undifferentiated carcinoma within vascular space and inflitrating the stroma. Also present are foci of haemorrhages and necrosis.

Interpretation: Small cell undifferentiated carcinoma metastatic in iris. Appearance is compatible with the clinical

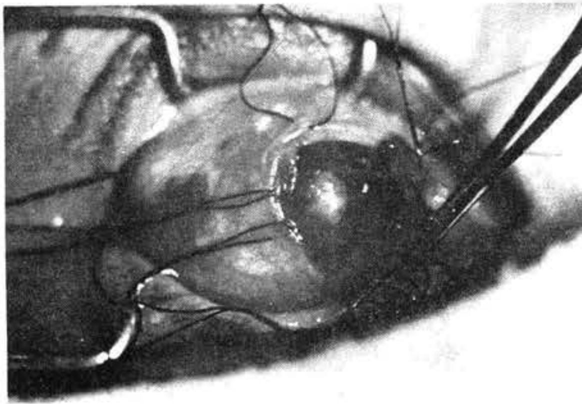

Figure 5

Showing the whitish nodular vascular mass during surgery.

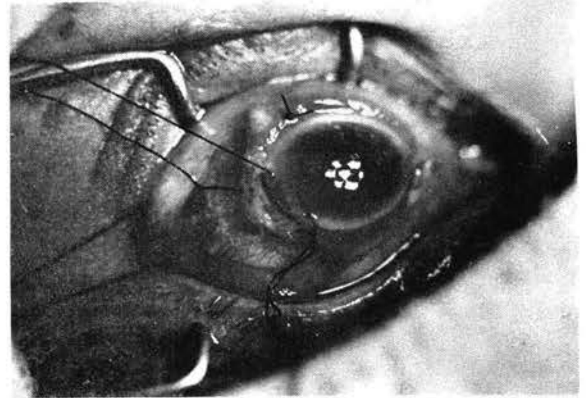

Figure 6

After removal of the nodular mass.

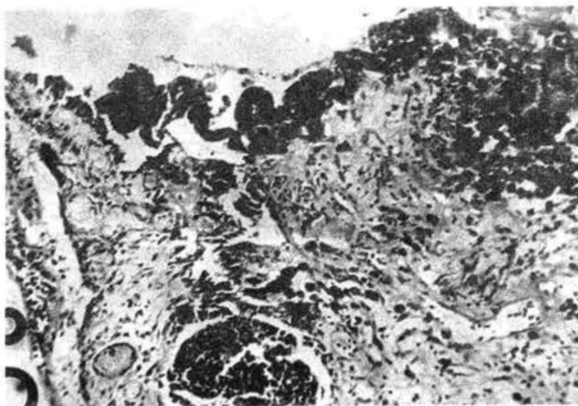

Figure 7

Low Magnification
Small cell undifferentiated carcinoma metastatic in iris.

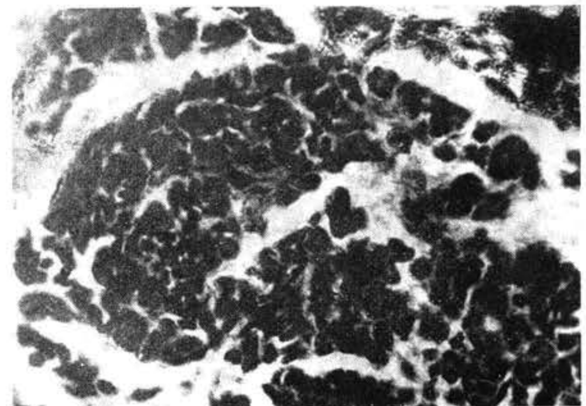

Figure 8

High Magnification
Small cell undifferentiated carcinoma in iris, compatible with clinical diagnosis of metastacis from carcinoma of the bronchus.

diagnosis of metastacis from carcinoma of the bronchus.

Right eye after Surgery – 14 days after surgery
VR. 6/60 VL. 6/6
Tension – 17 mm.Hg.
Fundus – Vaguely seen due to post-subcapsular lens opacity.

Review

With the above comment, I would like to compare this case with a review of 26 cases done by Andre P. Ferry, M D and Ramon L. Font in their paper "Carcinoma Metastatic to the Anterior Segment of the Eye" – Ref. Arch. Ophthalmology/ Vol. 93 July, 1975.

In his 227 patients with carcinoma metastatic to the eye and orbit, there were only 26 cases where metastatics to anterior uveal tract was the predominating feature.

There was a definite propensity for the tumour to involve the horizontal meridian of the iris or ciliary body, rather than the upper or lower portions. The site of the primary tumour in the 26 patients was as follows:

Lung – 14, Breast – 9, Kidney – 2, Rectum – 1.

Ocular symptoms and signs produced by the metastatic tumour at onset or during the course of the disease include – decrease vision 80%, a visible mass 72%, redness of the eye 56%, pain 56%, glaucoma 56%, iridocyclitis 44% and hyphema 24%.

The median survival of the 26 patients with metastatics to the anterior segment of the eye was only 5.4 months from time of ocular surgery. This is poorer than the median survival (7.2 months) of the patients with metastasis confined to the posterior segment and much worse than the median survival (15.6 months) of 28 patients with orbital involvement. Also noted in his study is the propensity for carcinoma of the lung to metastasize in the eye early and for mammary carcinoma and other cancers to metastasize in the eye late as seen in his study of metastasis in the anterior segment.

Of the nine breast carcinoma metastasis to the anterior uveal tract, eight produced symptoms after the presence of a primary carcinoma been recognised. Conversely of the 14 patients with lung carcinoma in the study of metastasis to the eye preceded recognization of the primary pulmonary tumour in ten. Thus the lung is assuming an increasing importance as a source of tumour metastatic to the iris and ciliary body.

Acknowledgement

I am thankful to the following who helped me in presenting this paper:

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2. Department of Pathology, General Hospital, Kuala Lumpur.
3. Mr. Charley Abraham, Medical Photographer, General Hospital, Kuala Lumpur.
4. Mr. Wong Wai Ming, Medical Photographer, General Hospital, Seremban.

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Four New Anti-Inflammatory Drugs

Responses and Variations

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Summary

90 PATIENTS with rheumatoid arthritis completed a double-blind crossover trial comparing fenoprofen, ibuprofen, ketoprofen and naproxen. Fenoprofen and naproxen were slightly more effective than the other two drugs but there were striking individual variations in response. It was possible to identify groups of patients who preferred each one of the four drugs.

The commonest side effects were those related to the upper gastro-intestinal tract. Such side effects also showed individual variation and seldom occurred with more than one or two of the drugs. Side effects were least common in patients receiving ibuprofen and naproxen.

Since naproxen combined greater effectiveness and a lower incidence of side effects, it must be regarded as the first choice of drugs in this group. The individual variation suggests that it may be necessary to try several before finding the right drug for a particular patient.

If aspirin is no longer the first line treatment of rheumatoid arthritis (Huskisson, 1974; Huskisson et al, 1974; Lee et al, 1974) its place must surely have been taken by one of the propionic acid derivatives. But by which one? The four currently available compounds claim analgesic potency comparable to that of aspirin but with a very much lower incidence of side effects. In this study their effectiveness and tolerability have been compared.

Methods

105 out-patients with definite or classical rheumatoid arthritis by the ARA criteria were admitted to the study. They were treated for two weeks with each of four drugs, fenoprofen 2.4 G daily, ibuprofen, 1.2 G daily, ketoprofen 150 mg daily and naproxen 500 mg daily. The order of treatment was randomised and balanced in a latin square design. Patients who dropped out of the study for reasons unrelated to the treatment were replaced to ensure that at least three complete balanced blocks of 24 patients were achieved. The doses used were those recommended by the manufacturers at the time of the study. To avoid recognition of tablets which patients might already have received, each treatment was supplied by its manufacturer in a formulation different from the marketed form – fenoprofen was supplied in 300 mg white capsules, ibuprofen in 300 mg white tablets, ketoprofen in 25 mg white capsules and naproxen in 125 mg yellow capsules. Data confirming their bioavailability was available in all cases. Simple analgesics were allowed during the study and in 10 patients who were taking small doses of corticosteroids, these were continued. No other anti-rheumatic therapy was allowed during the study.

At the end of each fortnight, measurements were made of pain using a visual analogue scale, the duration of morning stiffness and proximal interphalangeal joint circumference. A preference was sought for each pair of treatments and after the third and fourth treatment periods, a rank order of preference was noted. The patients were asked a standard question at the end of each treatment period: "Has the treatment upset you in any way?" Any side effects elicited were recorded as either slight, moderate or severe. Returned tablets were counted. Measurement of a particular patient was

Table 1 Means of measurements made after 2 weeks treatment with each drug

	Pain	Duration of morning stiffness (mins)	Joint size (mm)	Number of first choices *	Preference (sum of ranks)
Fenoprofen	10.6	63.0	568.0	29	210.5
Ibuprofen	11.6	98.2	568.5	13	245.0
Ketoprofen	11.4	89.0	569.2	12	241.0
Naproxen	10.3	70.3	568.3	34	203.5

	Total side effect score	Gastric side effect score	Returned tablets (number of days supply)
Fenoprofen	171	119	1.6
Ibuprofen	67	36	1.1
Ketoprofen	114	87	1.8
Naproxen	62	43	0.4

* Two additional patients divided their first choice between two drugs.

Acknowledgements

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Book Reviews

MEDICINE IN CHINESE CULTURES:
Comparative Studies of Health Care in Chinese and Other Societies. Kleinman, A., Kunstadter, P., Alexander, E.R., and Gale, J.L. (editors), Department of Health, Education and Welfare, U.S. Government Printing Office, Washington, D.C. 1975. pp. 803. U.S. $11.

THE BOOK is a compilation of papers and discussions contributed to a conference, *Comparative Study of Traditional and Modern Medicine in Chinese Societies,* sponsored by the University of Washington and the Fogarty International Centre, National Institutes of Health, and held in Seattle, Washington, February 4–6, 1974. It has a total of 49 shapters grouped into five interconnected sections covering the following subjects: medical systems in Chinese societies; medical systems on the periphery of China; demographic and epidemiological aspects of medicine in Chinese culture; research implications of both the study of medicine in Chinese societies and of comparative medical studies; and practical implications of these twin subjects for health care systems in developing countries and the United States.

As was intended, the book reflects the interdisciplinary mix of the conference participants the largest group of whom were anthropologists. Other contributors included several sociologists, psychologists, psychiatrists, epidemiologists, historians, and physicians. The consequently broad approach is laudable but the intended desire to bridge interdisciplinary differences is only minimally achieved. Many of the contributions are heavily weighted with disciplinary prejudices and approaches.

Another major limitation of the book, as well as the conference which it reflects, is the almost total dominance by participants from the United States. With the notable exception of one sociologist from Hongkong, none of the "native" Chinese either from the People's Republic of China or from the overseas Chinese who were the focus of the conference and of the book were included. It cannot be said that there were no qualified Chinese "natives" in the several disciplines brought together at the conference. Surely out of the more than 600 million Chinese in Asia that would be inexcusable. As noted by the editors, participants from the PRC were invited but did not participate. Contributions from the other Chinese in Asia would have enriched both the conference as well as the book.

Inspite of these major weaknesses, this book represents a major collection of contributions in health care in Chinese societies. Because of its interdisciplinary approach it is particularly unique, yet difficult to read. Each reader must select what is useful to him from the mass of contributions contained in this 803 paged source book.

PAUL C.Y. CHEN, M.D.

List of Publications of SEAMEO-TROPMED PROJECT

The following printed material is available on sale at the office of the Central Coordinating Board, 420/6 Rajvithi Road, Bangkok 4, Thailand.

SEAMEO-TROPMED REGIONAL MEETINGS

I. Seminar

1. The First SEAMEO-TROPMED Seminar: "Tropical Medicine in Southeast Asia". August 1967. Bangkok.
2. The Second SEAMEO-TROPMED Seminar: "Parasitology and Tropical Medicine in Southeast Asia". 10–11 November 1967. Kuala Lumpur.
3. The Third SEAMEO-TROPMED Seminar: "Medical Entomology of the Asian Region". January 1968. Bangkok.
4. The Fourth SEAMEO-TROPMED Seminar: "Filariasis and Immunology of Parasitic Infections". November 1968. Singapore.
5. The Fifth SEAMEO-TROPMED Seminar: "Schistosomiasis and Other Snail Transmitted Helmnithiasis". January 1969. Bangkok.
6. The Sixth SEAMEO-TROPMED Seminar: "Nutrition of Southeast Asia". October 1969. Jakarta.
7. The Seventh SEAMEO-TROPMED Seminar: "Infectious Diseases of the Gastrointestinal System in Southeast Asia and the Far East". October 1970. Taipei.
8. The Eighth SEAMEO-TROPMED Seminar: "Occupational Health in Southeast Asia". May 1971. Singapore.
9. The Ninth SEAMEO-TROPMED Seminar: "Epidemiology, Prevention and Control of the Endemic Diseases in Southeast Asia and the Far East". July 1971. Tokyo.
10. The Tenth SEAMEO-TROPMED Seminar: "Symposium on Chemotherapy in Tropical Medicine". October 1971. Bangkok.
11. The Eleventh SEAMEO-TROPMED Seminar: "Uses of Radioisotopes in Tropical Medicine and Public Health". 6 October 1972. Manila.
12. The Twelfth SEAMEO-TROPMED Seminar: "Biology, Immunology & Treatment of Parasitic and Bacterial Diseases of Public Health Importance in Southeast Asia and Far East". 29 May – 2 June 1973. Seoul.
13. The Thirteenth SEAMEO-TROPMED Seminar: "Current Problems of Infectious Diseases of Public Health Importance in Southeast Asia". 7–21 June 1974. Saigon.
14. The Fourteenth SEAMEO-TROPMED Seminar (Workshop): "Schistosomiasis in Southeast Asia and the Far East". 10–14 June 1975. Bangkok.
15. The Fifteenth SEAMEO-TROPMED Seminar: "Pediatric problems in Southeast Asia". 24–28 November 1975. Bangkok.

II. Seminar-Workshop

1. Seminar-Workshop on "Malaria". 3–5 March 1972. Kuala Lumpur.
2. Seminar-Workshop on "Ergonomics". June 1972. Bangkok.
3. Seminar-Workshop on "Vector Control". August 1972. Singapore.

III. TROPMED Technical Meeting Series

1. First Meeting: "Food and Nutrition Monitoring in Mekong development Areas". 14–16 November 1973. Bangkok.
2. Second Meeting: "Diagnostic Methods for Important Helminthiasis and Amoebiasis in Southeast Asia and the Far East". 5–8 February 1974. Tokyo.

IV. Conference

1. Regional Conference of "Dermatology". May 1974. Singapore.