Road Accidents

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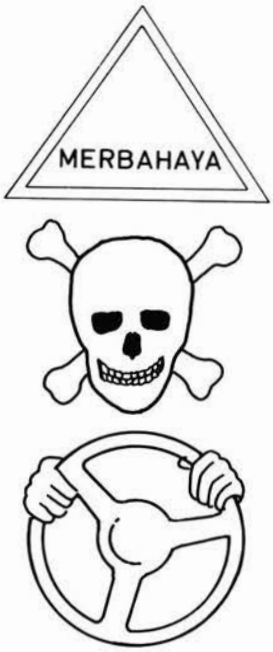


INTRODUCTION:

In a previous presentation it was observed that road accidents was singly, the major contributory factor in the genesis of femoral shaft fractures[2].

In 1952, when the driving test was resumed after the national emergency, the Annual Report of the Federation of Malaya, showed there were 82,591 registered vehicles spread over 6,062 miles of road surface. No mention was made about any fatal road accidents in this report[1]. In 1971 however, of the total number of 2,211 deaths resulting from all accidents death in Peninsular Malaysia, 1914 were certified. Of these, certified road accidents accounted for 77 deaths and this is considered to be only about a third of the actual registerable figures[9].

At the same time, perusal of the achieve, Medical Records Office, University Hospital, Kuala Lumpur, reveal that for the period under study, the mortality rate among victims, only those admitted into the wards, accounted for 3.4% of all deaths in this hospital. The average age at the time of death was 34.6 years for the accident victims and 40.8 years for the others[5]. The low age group for the latter is to some extent due to the fact that a third of the death rate are under 14 years age group.

These findings themselves were considered to present sufficient reason for undertaking this study. And, when attention is focussed on the rapid urbanisation and industralisation, effective at present and envisaged in future with the inevitable increase in fast vehicular traffic and its attending sequelae, the relevance of this study becomes substantially magnified and self evident.

This presentation does not pose to be a comprehensive paper. Instead, it represents the results of study of all long bone fractures, wherein road accident was the aetiologic factor and seeks to present the pertinent features as adduced from the study of these cases encountered in the Orthopaedic service of this hospital. Furthermore it hopes to draw attention to the possible long term, clinical and economic, impact it may have on the victims at large.

METHOD AND MATERIAL:

The series includes all cases of long bone fractures, treated or admitted, in this unit from June 1967 upto year ending 1971 inclusive. Cases with eranio-facial, thoracic and abdomial injuries resulting from road accidents, in accordance with the rules of the hospital practice were admitted to separate disciplines; hence, are not included in the study. Likewise, spinal injuries due to road accidents have been also excluded for convenience of enabling a better study of long bones only.

VICTIM	PEDESTRIAN		VEHICULAR	
SEX	MALE	FEMALE	MALE	FEMALE
No. OF CASES	79	34	435	64

Table 1 SEX DISTRIBUTION AMONG PEDESTRIANS AND OTHER ACCIDENT VICTIMS

SIDE OF FRACTURE	PEDESTRIAN	OTHER ROAD TRAFFIC ACCIDENTS
Left.....	55	233
Right.....	55	256
Bilateral.....	3	10
TOTAL.....	113	499

Table 2 SIDE OF FRACTURE IN PEDESTRIANS AND VEHICLE OCCUPANTS

Of the 1965 fracture cases studied, 612 fractures have their origin in road accidents, thus yielding a figure of 39.13%. Of these 514 (84%) were males and the remaining 98 (16%) were females. All case histories and roentgenograms have been personally scrutinised. The relevant informations were punched on IBM cards and data obtained thereof. Features, considered noteworthy and pertinent to this study, are broken down in tabular forms to help enable a rapid and critical evaluation.

AGE (YEARS)	PEDESTRIAN	MOTOR CYCLE/ PEDAL CYCLE (RIDER / PILLION)	FOUR-WHEELED VEHICLE (DRIVER/ PASSENGER)	MOTOR VEHICLE (TYPE OF VEHICLE UNSPECIFIED)	TOTAL
0-10.....	15	19	1	5	40
11-20.....	17	90	17	7	131
21-30.....	17	160	21	16	214
31-40.....	13	51	11	10	85
41-50.....	10	28	8	6	52
51-60.....	18	22	6	2	48
61 and above...	23	9	5	5	42
TOTAL	113	379	69	51	612

Table 3 PROVIDING BREAK DOWN IN AGE GROUP AGAINST THE TYPE OF VEHICULAR ACCIDENTS

TYPE OF VICTIM / BONE	Motor cycle/ Pedal cycle Rider	Motor cycle/ Pedal cycle Pillion	Motor cycle/ Pedal cycle Victim Unspecified	Four-wheeled Vehicle Driver	Four-wheeled Vehicle Passenger	Four wheeled Vehicle Victim Unspecified	Type of Vehicle Unspecified	Pedestrian	Total
CLAVICLE	56	6	0	6	3	3	14	15	103
HUMERUS	31	3	2	5	4	3	5	3	56
RADIUS/ULNA	76	7	0	7	9	1	10	14	124
NECK OF FEMUR	26	0	0	1	2	0	2	9	40
SHAFT OF FEMUR	58	16	0	8	8	1	5	14	110
TIBIA/FIBULA	83	14	1	3	3	2	15	58	179
TOTAL	330	46	3	30	29	10	51	113	612

Table 4 SHOWING THE ETIOLOGIC FACTOR IN FRACTURES OF EACH OF THE BONES, IN THE FIRST THREE AND ONE HALF YEAR OF INCEPTION OF THE UNIVERSITY HOSPITAL, KUALA LUMPUR

PLACE	No. OF CASES
Buit-up area	240
Rural area	34
Highway	30
Garage	1
Unspecified	307 •
TOTAL	612

• 50·2 %

Table 5 PRESENTING A BREAK DOWN OF THE SITE OF ROAD TRAFFIC ACCIDENTS

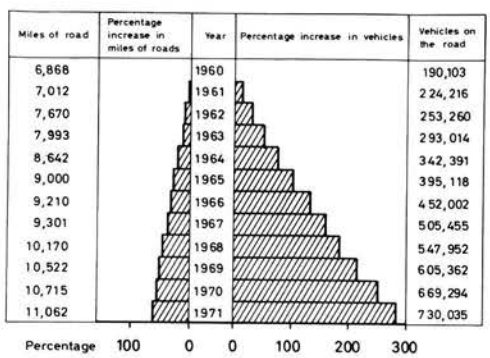
Table III shows fracture incidences are commonest in the twenties and thirties age group when majority are essentially wage earners. Table IV reveal that in the majority of cases (53.8%) the lower extremities are involved, mostly among riders of two wheeled vehicles (62%). During the period included in the study, the ethnic ratio of attendance/ admittance was three Malays to nine Chinese to six Indians and to one others.

DISCUSSION:

Available data, presented in the tabular forms are self explanatory. The variations in age sex, side, site and osseous disposition, as seen from tables I thru V, are but few of the variable features not peculiar to this study. On the contrary, these are well established features, long since recognised[4] and in keeping with the earlier findings of analogous studies available from the older industralised societies[6].

The salient feature of this study is in the fact that 39.13% of long bone fractures have their origin in road accidents. The age of accident predeliction as seen in Table III is an important though not a remarkable feature.

It is perhaps regretable, that such large number of accidents should have been allowed to prevail, for this lead to suggest that the legislative and cautionary measures, long since implemented in the technocratic countries on the advice of previous expertise seems to have received little attention. It is feared that if these findings should be the representative of hospitals at large which it may well be then the economic impact on the populace and the clinical effect on the victims is likely to be profound.



Showing the percentage increase of road milage and circulating vehicles over one decade in Peninsular Malaysia

Table 6

In 1960, Peninsular Malaysia sported 190,103 motorised vehicles over 6868 miles of road surface[7]. In 1970 the vehicular traffic increased to 669,294 and road mileage to a total of 10,715[8]. Over a decade therefore, whereas the road mileage has increased by 56% the number of motorised vehicles compounded by 252%. To an extent, therefore this imply, that the accident pattern is a numerical expression of this gross mathematical discrepancy. Besides, these roads have undergone little if any, qualitative alterations since the time its use was limited to the accommodation of a more gentle road traffic system.

The total period of hospitalisation needed for the sample of cases under study was in the order of 14,226 days or 36.6 days per case. The expenditure incurred by the hospital was at the rate of $51.00 per diem per case[5]. When calculated, amounted to a total of $725,526:00 or $1867:00 per case To this value, when the loss in wage earning, in work hours and compensation payment are added, it is suspected that this will add to a sizeable amount.

In a recent study, undertaken to evaluate the quantum of cash compensation in claim settlement among road accident cases, numerous case examples, involving all bones, both from the Federation and Singapore, have been cited. Based on these precedents, an almanac designed to give working formulae for computing the compensation eligibility is provided. Broadly speaking, for permanent disabilities resulting from accidents in a person earning $100.00 per mensem with an expected 15 year future period of workability, after making allowance for natural contingencies, the amount computes to $12,406.00. Likewise for those earning $500.00 and $1,000.00 for the same period, the amounts would be $62,280.00 and $124,560.00 respectively[2a].

If it is realised that this study emanates from a single handed legal practice in a moderate sized district town where over 98% of clientele seeking legal aid receive favourable settlement[2b] then the sum of money involved must pose an economic encumburance, within forseeable future on the community at large. Furthermore, it is feared that when long term clinical evaluation of these victims will be made, the "quality of life and limb" resulting from the legacy of such accidents may leave residual disabilities severe enough to undermine the earning potential of the individual.

As a result, the state will increasingly inherit larger number of citizens with financial liabilities who may well impose a drain on the national budget.

Fig. 2: Man with a red flag who had, by law, to walk in front of the car in 1890's
(British Information Services, – by kind permission) London.

In a relatively short space of time the car has made meteoric progress from its humble origin when its arrival at the cross roads was formally announced by a bearer exhibiting a red flag.

Fig. 3a: Kuala Lumpur, 1920's
(Film Negara – by kind permission)

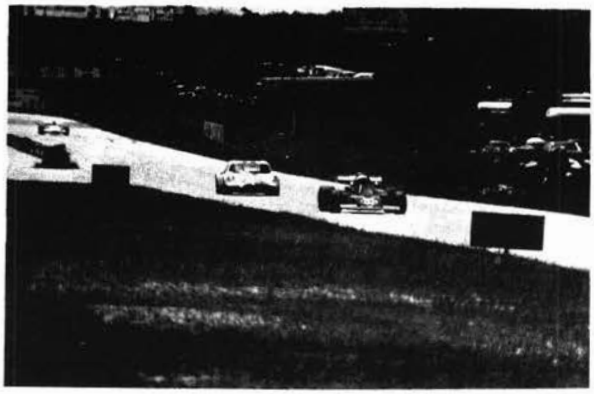


Fig. 3b: Batu Tiga, 1973.

It is expected, that in not too distant a future the modern car will be made to work faster and the road traffic system will have to learn to accommodate to these changes. How close is this past and how the future changes in the ecology of the road traffic system looms over us. The organism is the car and the disease is in its infancy. Unless the problem is reckoned with now, doctors in general and orthopaedists in particular, will be increasingly involved in the rescue of the victims and the rehabilitation of the maimed.

SUMMARY:

Six hundred and twelve road accident victims, treated at the Orthopaedic Service of this hospital, during the initial three and one half year of its establishment, are presented. From the parameters studied, an insidious but definite increase in the number of such victims is evident. It is pleaded, that unless pragmatism replaces the present day complacency and adequate measures devised and incorporated early in the formulation of the Malaysia Plans, the nation will be encumbered with misfortunes arising from increased vehicular traffic as encountered in the older industrialised societies.

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