CHRONIC SUBDURAL HEMATOMA: A REVIEW AT GENERAL HOSPITAL, KUALA LUMPUR

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SUMMARY

Forty-eight patients treated surgically for chronic subdural hematoma in General Hospital Kuala Lumpur were studied retrospectively. The clinical presentations were insidious and non specific. A high clinical index of suspicion for this disease is requried. Diagnosis is confirmed by CAT Scan of the brain with or without cerebral angiography. Treatment consists or burr-hole(s) and drainage with good results.

INTRODUCTION

Chronic subdural hematoma is a collection of intracranial liquefied altered blood between the brain and its surrounding dura, presenting usually two weeks or more after the initial trauma.[1,2] The clinical presentations are variable and non specific and diagnosis can be difficult.[3] The advent of Computerized Axial Tomogram (CAT) scan has very much simplified the diagnosis of chronic subdural hematoma. Cases are still missed especially where the subdural hematoma is isodense with the brain. Though surgical treatment is straightforward in most cases, delayed diagnosis has led to unfavourable outcome.[1,2]

This restrospective review will study the epidemiological aspects of patients with chronic subdural hematoma and also to evaluate the management of such patients in General Hospital, Kuala Lumpur.

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MATERIAL AND METHODS

The clinical recrods of all patients operated for chronic subdural hematoma at the Institute of Neurosciences, General Hospital Kuala Lumpur during the period from Jan. 1979 to December 1984 were reviewed. A total of 50 records were obtained, but two of these had to be excluded due to inadequate information. Children and infants were excluded from the study as subdural collection in these age groups constitute a separate distinct clinical entity.[1]

RESULT

A total of 48 patients were included in this study. Being the National Referral Centre, the patients came from all parts of the country, including East Malaysia. Thirty-five patients (73%) were directly referred by other hospitals or medical practitioners. While the rest were internal referrals within General Hospital, Kuala Lumpur. There was a male predominance with 43 males (90%) and 5 females. These comprised 28 Chinese (58%), 12 Indians (25%), six Malays (12%) and two from other ethnic groups. The age ranged from 19 to 78 years with the peak incidence in the fifth decade (33%). Thirty-seven patients (78%) were above the age of 40 years (Fig. 1).

The clinical evolution of chronic subdural haemtoma is insidious, usually over a period of few weeks or months. Twenty-two patients presented eight weeks or more after the initial trauma or onset of the first symptom. Three patients had the symptoms for more than six months of whom one had been suffering from headache and giddiness for a year. Thirty-nine patients (81%) gave a positive history of head injury. The commonest cause of head injury

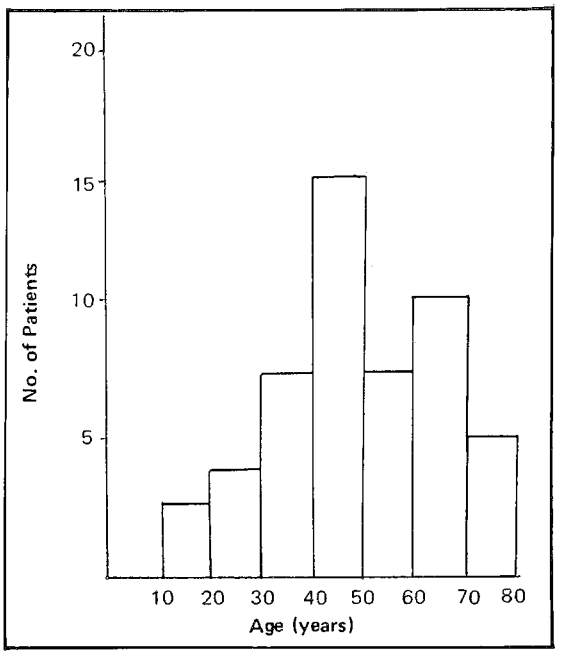

Fig. 1 Age Distribution of patients with chronic subdural hematoma.

was road traffic accidents (56%), followed by a fall (19%), hit by a fallen object (4%) and assaulted (2%). In nine patients (19%), there was no history of trauma at all.

Headache was the commonest symptom present in 69% of the patients. 50% of the patients with some change in the level of consciousness, ranging from drowsiness to deep coma. Thirty-three percent of the patients had some motor weakness, while others presented with rather non-specific symptoms including mental changes (memory deficit, personality changes, intellectual impairment) and psychiatric disorders (Table I). These symptoms, presenting in various combinations, were misleading, particularly amongst the older age groups. Indeed, two of the patients in this series were treated as schizophrenic, one had meningitis and one referred with a brain tumour. Interestingly, none of our patients presented with seizures. Eighteen patients (37.5%) were found to have various degrees of motor deficit on examination. Twelve patients (25%) already had papilloedema denoting significant increase in the intracranial pressure. However, the classical triad of increased intracranial pressure presenting with headache, vomitting and papilloedema was observed in only four patients. Three patients already showed evidence of tentorial herniation with pupillary changes, while an equal number of patients were aphasic.

TABLE I

SYMPTOMS OF CHRONIC SUBDURAL HEMATOMA

Symptoms	No. of Patients (%)
Headache	33 (69)
Change in level of sconsicousness	24 (50)
Motor decifit	16 (33)
Mental Symptoms	14 (27)
Vomiting	13 (27)
Blurred vision	12 (25)
Giddiness	4 (8)
Ataxia	1 (2)
Urine Retention	1 (2)
Seizures	0 (0)

Carotid angiography and computerized Axial Tomogram (CAT) scan were invaluable and accurate in the pre-operative diagnosis of chronic subdural haematoma. Cerebral angiography was performed in 29 patients (Fig. II) and a CAT Scan in 24 (Fig. III, IV). Three patients had isotope brain scan done prior to referral.

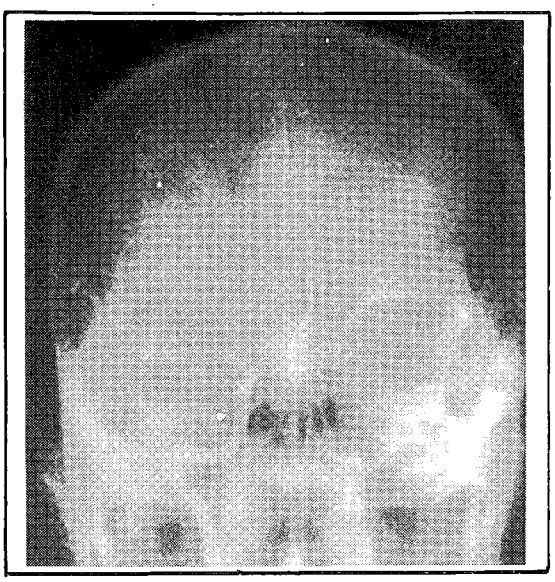

Fig 2 Carotid angiogram of a chronic subdural hematoma

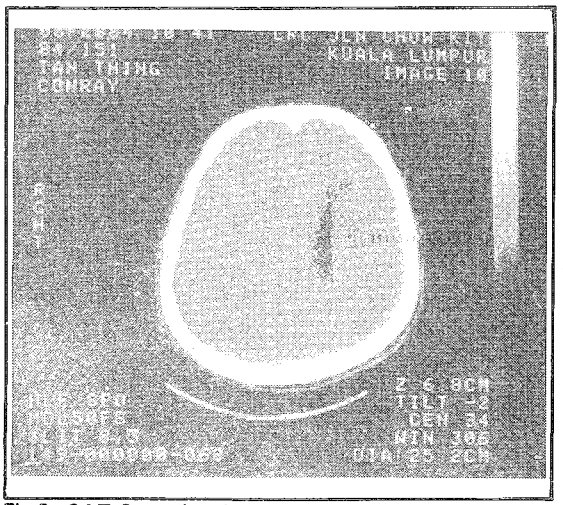

Fig 3 CAT Scan showing a hypodense chronic subdural hematoma.

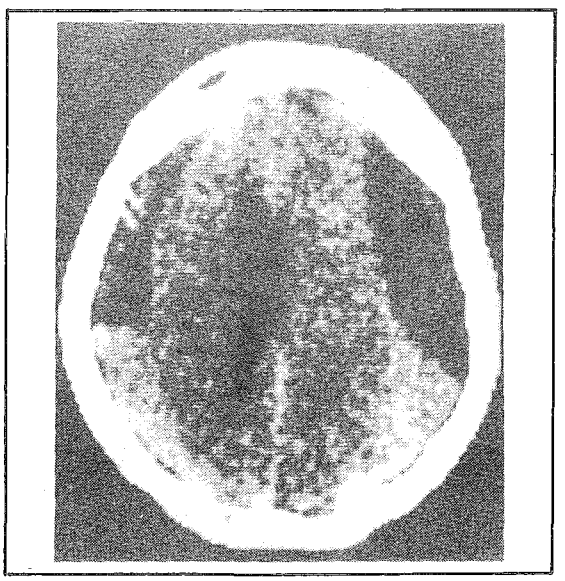

Fig 4 CAT Scan showing a bilateral mixed density chronic subdural hematoma.

In all our patients the chronic subdural haematoma was successfully evacuated via burr hole(s). This was achieved by single burr hole (38 patients) or by two ipsilateral burr holes (10 patients). In most cases, the liquefied subdural blood shot out under pressure the moment the dura was opened and the subdural space was generously irrigated with saline until the returning fluid was clear. In all cases, a rubber jacque catheter was inserted into the subdural space to allow further drainage for the next 24–48 hours. The immediate post operative recovery was remarkably good in most patients. There was no operative mortality. Thirty-nine patients (81%) achieved good recovery at the time of discharge. Only four patients were severely disabled, of these, two were more than 60 years old, one had had symptoms for one year while the other patient sustained multiple injuries. Twenty-seven patients (56%) were discharged within 1–2 weeks of hospitalization.

TABLE II

CLINICAL OUTCOME OF PATIENTS AT DISCHARGE

Glasgow outcome scale	No. of Patients (%)
Good Recovery	39 (81)
Moderately disabled	5 (11)
Severely disabled	4 (8)

Significant recurrence of haematoma as documented by a CT Scan was noted in five patients, all of which resolved with repeated drainage or aspiration. Infections were noted in three patients, two were minor superficial infections while the other developed into a subdural empyema which fortunately resolved after repeated aspirations and antibiotics treatment

DISCUSSION

Chronic subdural hematoma presents a distinct clinical problem from acute trauma to the brain. With the chronic subdural hematoma, the onset of the symptoms is remote in time from the original trauma, which is usually trivial. There is a little or no direct trauma to the brain parenchyma or cerebral oedema. The effects of the chronic subdural hematoma is mainly mechanical due to its space-occupying effect and brain shift. Focal cortical compression, raised intracranial pressure, and cerebral ischaemia contribute to the symptomatology. The aetiology and pathogenesis of chronic subdural hematoma has always been a subject of great interest and controversy. Various hypotheses had been put forward which ranged from the concept of "panmeningitis haemorrhagica" proposed by Virchow in 1983; trauma as a cause was proposed by Trotter in 1914 and

Cushing in 1925; the osmotic theory by Gardner in 1932; to the more recent effusion – rebleeding concept as proposed by Gitlin in 1955.

Our series of 48 patients over a six-year period certainly does not reflect the true incidence of chronic subdural hematoma. The insidious evolution of the disease coupled with non-specific clinical manifestations frequently make diagnosis difficult. More important, the lack of clinical awareness and admittedly the lack of diagnostic facilities has led to some erroneous diagnosis. As shown in our series, patients have been mistakenly diagnosed as suffering from brain tumour, schizophrenia, meningitis, cerebral vascular accident and dementia. About half of our patients were only referred to neurosurgical service eight weeks or more after the initial trauma or onset of the first symptom. A quarter of our patients already had significantly raised intracranial pressure as evidenced by the presence of papilloedema whilst three patients also showed signs of tentorial herniation. Chronic subdural hematoma is essentially a disease of the older age groups.[6,7] In our series, 78% of our patients were more than 40 years old with about 30% more than 60 years old. There is definitely a male predominence[4,5] as shown in our series in which 90% of the patients were male. Chinese made up the majority of the patients, this probably reflect the urban distribution of the Chinese and readiness as compared to other ethnic groups, in accepting medical treatment and surgical interventions. Our series also give further support that headache is the commonest symptom in patients with chronic subdural hematoma.[8] Other clinical changes are fairly non-specific and subtle in nature which consisted of some degree of alteration in the level of consciousness, mental changes or mild motor deficit. These rather non-specific clinical features, especially in the elderlies, has certainly contributed to many missed diagnosis and delay in treatment. Careful enquiries about past head injuries, which was found in 81% of our patients may give important clue to the diagnosis. However, the trauma was usually minor and might even be so trivial that it could not be recalled, especially in the elderlies. Other predisposing factors, e.g. alcoholism, epilepsy, anticoagulant therapy,[4] vascular lesions and hemorrhagic diathesis[1] should be carefully sought for. Though seizure was noted in 19% of the patients in one series, none of our patients presented with seizures.

Surgical treatment represents the most rational and effective solution to chronic subdural hematoma. This is usually acheived by burr hole(s) and external drainage.[11,12,13] Simple twist-drill drainage via a ventricular needle has been successful in treating well liquified subdural hematoma.[14] Craniotomy is rarely indicated in cases of recurrent, intractable subdural hematoma or where the hematoma consisted of sizeable clots or multiple loculations. As in our series, good results were achieved with burr-hole and drainage alone while poor outcomes were restricted to those whose treatment were delayed or associated with other systemic factors. Operative complications fortunately were limited and could be overcome without too much difficulty. Medical treatment consisting of bed rest, mannitol and steroids have been advocated by some with good results.[9,10] Medical treatment should only be reserved for patients who are not in coma and the treatment inevitably entails prolonged hospitalisation and repeated radiological studies to monitor the sixe of the hematoma.

Early diagnosis and prompt surgical treatment is essential for the success of the management of chronic subdural hematoma. In order to accomplish this, a high index of suspicion is necessary and the clinician must consider chronic subdural hematoma as a differential diagnosis in all patients above the age of 40 and those with chronic alcoholism who present with mental disturbance or focal neurological deficit.

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