Chronic subdural haematoma: Review of 96 cases attending the Korle Bu Teaching Hospital, Accra

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Summary

Background: **Chronic subdural haematoma is not uncommon in Africa. Early diagnosis and treatment is satisfying. Simpler operative procedures are generally effective. This review is meant to find out the situation regarding the condition in Ghana.**

Study design: **A retrospective study of patients with chronic subdural haematoma admitted to and treated by the Neurosurgical Unit of Korle Bu Teaching Hospital between January 1995 and December 1998 was undertaken. The case notes, computerise axial tomography (CT) scans and operative records were reviewed and the relevant data extracted. Incomplete records were excluded.**

Results: **96 patients were involved. The mean age of the patients was 46.9 years, with male to female ratio of 16: 1. The most common presenting feature was headache (64.7%). Time of injury to presentation was about 2 months. 81 were treated using burr hole and drainage and 15 by craniotomy and stripping of membranes. Eighty four were treated under general anaesthesia. Two were reoperated on because of recurrent bleed. There were two (2) deaths. Ninety patients had a Glasgow Outcome Score of good at the time of their last review.**

Conclusion: **The data suggests that burr hole and closed drainage is a very effective method of managing CSDH.**

Key-words: ***Chronic subdural, RTA, Headaches, CT scan burrhole, Local anaesthesia.***

Résumé

Introduction: Subdural haematoma Chronique nest pas rare dans l'Afrique. Le diagnostic et le traitement premiers satisfont. Les procédures opératives plus simples sont généralement efficaces. Cette revue est signifiée pour découvrir la situation en ce qui concerne la condition dans Ghana.

Plan d'étude: UNE étude rétrospective de malades avec subdural haematoma chronique a avoué et traité par l'Unité de Neuroligical de Korle Bu enseignant l'Hôpital entre le 1995 janvier et le 1998 décembre a été entrepris. Le cas note, informatisé la tomographie axiele (CT) les balayages et les rapports opératifs ont été réexaminés et les données pertinentes extraites. Incomplet a été rececords exclu.

Les résultats: 96 malades ont été impliqués, avec un âge moyen de 46,9 années, re l'âge moyen des malades était 46,9 années, avec le mâle à la proportion femelle de 16: 1. La caractéristique présente la plus commune était le mal de tete (64.7%). Le temps de blessure à la présentation était a peu près 2 mois. 81 ont été traités utilisant le trou de barbe et le drainage et 15 par craniotomy et dépouiller de membranes. 84 ont été traités sous l'anesthesie generale. 2 ont été reoperated sur parce que de récurrent saigner. Il y avait deux (2) les morts. 90 malades avaient un Score d'Issue de Glasgow de bon lors de leur dernière revue.

Conclusion: Les données suggèrent que ce trou de barbe et le drainage fermé est une méthode très efficace de gérer de SDHC.

Introduction

Chronic subdural haematoma (CSDH) is one of the most common type of intracranial haemorrhage. Early diagnosis and treatment can lead to complete recovery. However late diagnosis can be fatal[1]. The accumulation of blood in the subdural space is usually due to tearing of bridging veins. Little force is required to tear these veins and the initial injury may be trivial.

Blood accumulation can also be due to cerebral laceration principally at the temporal poles or due to arterial rupture[2]. Cerebral compression can be acute (up to three (3) days) or may be delayed for weeks or months or years with formation of liquid chronic subdural haematoma[3].

According to Mellegard et al. the mean age is 70.5 years and the male: female ratio is 2:1[4] but can be as high as 5: 1[5]. The most common aetiological factor is head injury followed by anticoagulant therapy[6]. Blood dyscrasias, excessive alcohol intake and arterial hypertension have also been associated with CSDH[4,6]. The symptoms can be non-specific, however headache is the most common presenting feature in all age group. Also altered levels of consciousness, memory impairment and occasionally lateralising signs including weakness of one side or the other[5,6] may occur. Presently diagnosis is usually established by computerised tomograhy (CT scan) and also magnetic resonance imaging (MRI). These have contributed enormously to early diagnosis and treatment[4,5,6,7].

There is agreement that operative treatment is indicated but there is still controversy as to which technique is best[8,9,10,11]. Some workers suggest that simpler procedures are very effective[12,13]. This review is meant to find out the situation regarding the condition in Ghana.

Patients and methods

We carried out a retrospective study of the hospital records of 96 patients with CSDH attending KBTH. All cases were seen at the Neurosurgical unit over the period January 1995 to December 1998. The various clinical features were recorded and analysed using Microsoft Excel. Diagnosis was established by CT scan in all cases. The mode of treatment was either burrhole and closed drainage or craniotomy and stripping of membranes. The outcome in

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each case was assessed using the Glasgow Outcome Score (GOS).

Result

The average age of the patients was 46.9 years with a range of 21 to 75 years. The male: female ratio was 16.1. More than half (62.5%) of the patients presented about two months after an initial traumatic event. The aetiology could be established in 67 (69.8%) of the patients with the most common cause being head injury, mainly due to road traffic accident (Fig 1). Headache was by far, the most common presenting feature followed by contralateral hemiparesis (Table 1).

Table 1 Frequency of symptoms associated with CSDH

Symptom	Frequency	Percentages
Headaches	62	64.6
Weakness	41	42.7
a. Contralateral	37	39.6
b. Ipsilateral	4	4.2
Confusion	17	17.7
Memory impairment	11	11.4
Blurred vision	9	9.4
Vomiting	9	9.4
Seizures	6	6.2

Table 2 Concomitant diseases associated with CSDH

Concomitant disease	Frequency
Hypertension	10
Alcoholism	8
Prolonged labour	1
Psychiatric background	3
Total number	22

Four patients were initially seen at the Department of Medicine where the diagnosis was made and then referred to the neurosurgical unit for operative management, whilst one initially presented at the Ophthalmology Department with complaint of blurred vision. Hypertension was the most common concomitant disease (Table 2).

Table 3 Glasgow coma scale at presentation

GCS	Frequency	Percentages
15	43	44.8
14	19	19.8
13	15	15.6
12	2	2.1
11	4	4.2
< 10	13	13.5
Total number	96	100

Table 4 Frequency of site of haematoma on CT scan

Site	Frequency
Bilateral	11
Left parieto-occipital	4
Left parieto-temporal	4
Left fronto-parieto-occipital	2
Left fronto-parietal	19
Right fronto-temporal	4
Right fronto-parieto-occipital	21
Right fronto-parietal	31
Total number	96

The Glasgow Come Scale recorded at the initial visit is shown in Table 3. Most of the patients presented in a conscious state with 5 presenting as emergencies in coma.

Diagnosis in all cases was by CT scan. The sites of the various haematomas are shown in Table 4. Eighty-four patients were treated under general anaesthetic and 12 under local anaesthetic. There were no complications with the latter technique. Eighty-one (88.2%) were treated by burrhole and drainage and 15(11.8%) by craniotomy and stripping.

Complications were as follows: three patients had

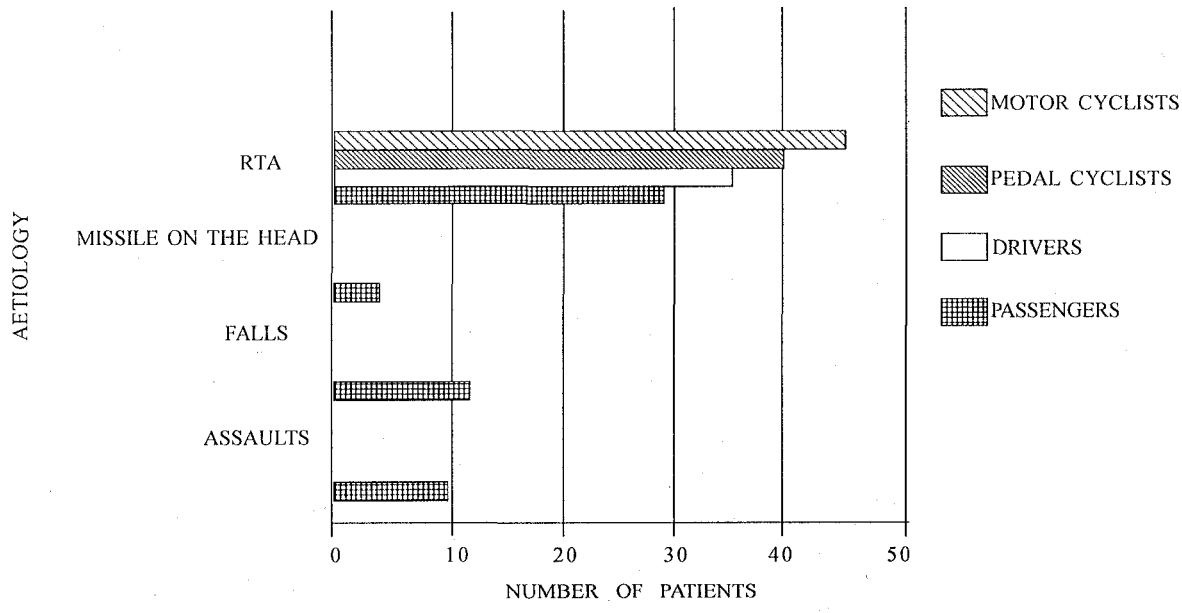

Fig. 1 ***Aetiology of head injury in CSDH***

pneumocephalus, 1 had an intracerebral haemorrhage, two had cerebrospinal fluid leakage and 1 patient had a second bleed after burrhole and drainage and so had a second operation which was craniotomy and stripping of membranes. With the exception of the last patient all the other complications were managed conservatively successfully. One patient had memory impairment prior to surgery but this persisted for about 19 months before recovery.

Postoperative CT scan was done at two weeks for all patients and then at any other period when indicated. For all patients with residual haematoma it was repeated at six month. This was the case in 65 patients (67.7%), all of which were considered small.

The average review period was about 20.8 months with a range of 6 - 23 months. Ninety had a GOS of good recovery at the time of their last review. There were two mortalities. One was the patient who rebled and had to have a second operation and the other had a GCS of 3 at referral and repeated generalised seizures.

Discussion

Subdural haematoma has been treated by neurosurgeons since 1956 after it was first described by Wepfer[14]. Recent experimental studies[15, 16, 17] suggest that blood in the subdural space evokes an inflammatory reaction with deposition of fibrin followed by organisation, formation of subdural neomembranes with ingrowth of neocapillaries. Enzymatic fibrinolysis and liquefaction of blood clots then follow. There is increase fibrinolytic activity and the release of fibrin degradation products (FDP's), which are, incorporated into new clots hence no effective haemostasis.

In more than half the patients (57 or 59.4%) in the above study presentation was about two months after the initial injury. We thought this probably represents the interval when the membranes, which are forming, have a significant effect on the central nervous system in most of the patients. This interval also conforms with the findings of Folgelholm et al who observed median intervals of 5 weeks, 7.5 weeks and 10 weeks in the age groups 20 - 29, 40 - 59 and 60 - 79 years respectively. However in our study the fine variation in different age groups could not be matched. The mean age (46.9years) was much lower than that in other studies[6] but comparable to the findings in India where the mode age group was 41 - 50 years[5]. This may suggest that a similar age group is a risk in both societies.

The most common presenting feature was headaches (64.7%). This was also the most common presenting feature in one study[6] however this was not the case in Sambasivan's study[5]. The male: female ratio of 16:1 reflects the epidemiology of head injuries in our society. It was also noted that arterial hypertension was the most common concomitant disease (9.0%) as was the case in one of the above studies[6]. However the incidence of hypertension in a similar general population in Accra was (8 - 11%)[18,19]. About 88.2% of the patients in this study were treated by a single burr hole craniostomy, saline irrigation and closed external drainage for 48 hours or a variable period. Only 11.8% had craniotomy and stripping of membranes. In the latter cases the haematoma was thought to be large with the presence of neomembrane formation on CT scan. Post-operatively no special measures were taken to fill the subdural space. We noticed that no such precautions were needed. Residual haematoma which was small in all cases seemed not to have affected the outcome. These small haematomas tended to disappear if the scan was repeated after six or more months.

Rebleeding, after operation was recorded once in our study. This patient's condition continued to deteriorate with repeated seizures after the operation and was reoperated on 10 days after the initial operation. He was one of the mortalities. The incidence of rebleeding range from 9.2%[15] to 26.5%[21]. The reason for this low incidence in our study is difficult to explain. Our suggestions is that our techniques involve minimal surgical manipulation with burr holes made large enough to allow evacuation of the subdural blood. This accompanied by thorough irrigation of the subdural space and external drainage for 48 hours reduce the load of fibrinolytic substances and probably restrain neomembrane formation. None of the patients were on long term anticoagulants. This may also be a factor in the low incidence. More work however is needed in this area.

The advent of CT scan in Ghana has also contributed enormously to the early diagnosis and treatment of the condition. Our impression is that early diagnosis and treatment of the condition will continue to increase, as the facility becomes available to more Ghanaians. There was no case of infection.

The two mortalities were both in a very poor state when they were referred. One had a recurrent bleed and the other incessant seizures. It is difficult to conclude whether the method used had any bearing on the outcome.

Conclusion

Burrhole drainage is effective and must be considered in all cases irrespective of haematoma size, the presence or otherwise of membranes and also as an initial procedure for recurrent bleeds. In developing countries such as ours relatively younger patients develop CSDH in accordance with the epidemiology of head injuries. The advent of the CT Scan in Ghana has contributed enormously to the early diagnosis and treatment of this condition. Our impression is that as the facility becomes available to many more on a regular basis the detection of CSDH will continue to be in the increase.

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