

Chronic Subdural Hematoma In An Emerging Neurological Surgery Unit: Eighteen Months Experience.

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ABSTRACT

Chronic subdural hematoma is a common neurosurgical burden in our environment affecting mostly the elderly. Treatment is usually burr-hole drainage with or without a subdural drainage insitu, done under either local or general anesthesia. Pattern of presentation varies. Outcome is usually good with early presentation. The aim was to analyse the pattern of presentation, compare outcome of treatment under LA and GA, in multiple burr-holes and single burr-hole, and, with and without subdural drainage. Restrospectively, all the cases of chronic subdural hematoma done in 18months period (between January, 2009 and July, 2010) were collated and analysed. Information was obtained from hospital records and analysed using SPSS-version 15. A total of 44 cases were analysed, 32 males and 12 females. Eighteen of them were 60 years and above whereas 9 of them were between 50 to 59years. Headache (23, 39.66 %) was the commonest symptom. Thirty-four cases (55.56%) resulted from RTA, 13 patients had associated co-morbidities (hypertension= 10, Dm=3). Approximately 9 (20.45%) cases were done under GA while 35 (79.55%) under LA. Re-occurrence was noted in 2 (4.55%) cases, both under LA. Majority of the patients were discharged within one week irrespective of the type of anesthesia (25, 56.82%). Outcome was generally good at 6 weeks and 6months using GOS.

Key words: hematoma, subdural, drainage, irrigation and outcome.

INTRODUCTION:

Chronic subdural hematoma is a common neurological burden in our environment affecting mostly the elderly with the average age being approximately 63years (exception was in few incidence of subdural collections of infancy).

Previous reports indicated earlier age incidence. Head trauma is identified in less than 50% of cases (sometimes rather trivial trauma) as evidenced in the study by Ohaegbulam (2011).

Other identified risk factors include, alcohol abuse, seizure, CSF shunts, coagulopathies (including therapeutic anti-coagulopathies), and patients at risk of falls (e g CVA). Chronic subdural hematoma may appear unilateral or bilateral. The collection tends to be larger in older patients as found in the study by Danito et al (2012) due to decrease in brain weight and increase in subdural space with age.

Classically, chronic subdural hematoma starts out as acute subdural which transforms to chronic probably following evoked inflammatory response. Danito et al (2012) in

their study however, identified many other theories implicated in the pathophysiology of chronic subdural hematoma.

It has ultimately believed to be prone to progressive expansion by way of episodic rebleeding and leakage into the existing hematoma of blood from fragile vessels within the membranes. Danito et al (2012) in their study also documented that the content of CSDH possesses both cagulopathic and inflammatory properties that potentiate this expansion. Fresh blood also leak into the CSDH and forms defective clot that is prone to hyperfibrinolysis , which in turn causing the inflammation, coagulopathy, and membrane formation. The classical colour is dark "motor oil" fluid which does not clot. This was evident in the studies done by Ohaegbulam (1981) and Danito et al (2012).

Common treatment is often burr-hole drainage with or without a subdural drain insitu done under either local or general anaesthesia. This form of treatment was adopted in the following studies by Markwalder et al (1981),

(2008), Danito et al (2012) and monograph of Richard Winn H. Youmans (2011).

The aim of this study was to analyse the pattern of chronic subdural hematoma in University of Nigeria Teaching Hospital, Ituku/Ozalla, Enugu, compare outcome of treatment under local and general anaesthesia, multiple burr-holes and single burr-hole, and with or without subdural drain.

MATERIAL AND METHODS

This was a retrospective analysis of all the cases of chronic subdural hematoma that had burr-hole and evacuation done in the eighteen months period (between January, 2009 and July 2010) of rebirth of the neurosurgical unit in the hospital. The information was

obtained from the patients' folders, operation notes and follow-up notes.

Improvement or disappearance of symptoms and neurological status were used as measure of outcome employing the Glasgow Outcome and Markwadler and Reulen Scores

Analysis was done using SPSS-version 15 and results arranged in simple tables.

RESULTS

A total of 44 cases were analysed; 32males and 12 females. The male to female ratio is 2.7: 1. Eighteen of them were 60years and above (40%), eight of them were between 50-59 years (18.16%).

Majority of the patients were noted to be discharged within one week of post-operative period. (25, 56.82%).

Table 1. Age And Sex Distribution:

Age group in years	>20	20-29	30-39	40-49	50-59	60-69	70
Male	0	2	6	7	7	6	5
Female	1	0	1	0	1	3	5
Total	1	2	7	7	8	9	10

Table 2: The Presenting Clinical Features

Clinical features	Frequency	Percentage
Headache	23	39.66
Loss of consciousness	8	13.79
Abnormal gait	10	17.24
Hemiparesis	7	12.07
Anisocoria	1	1.72
Aphasia/slurred speech	5	8.62
Irrational talk	6	10.34

The commonest symptom here is headache (39.66%) followed by abnormal gait (17.24%). Total of eight patients presented with altered level of consciousness, only one patient was anisocoric on presentation with five being either aphasic or just with slurred speech. A total of six patient had neuropsychiatric symptoms.

Table 3: Aetiological Factors And Co-Mobidities.

Aetiological factors	Frequency	Percentage
RTA	34	55.56
Fall	5	7.94
Assault	2	3.17
Unknown	5	7.94
Hypertension	10	15.87
Diabetes mellitus	3	4.74
Dugs/anticoagulant	0	0
More than one	3	4.76

From Table 3, it is obvious that trauma is the most associated aetiological risk factor accounting for about 55.56% with hypertension being the commonest co- morbid condition accounting for 15.87%. However, about 4.76% of the studying population had more than one of the studied factors.

Table 4 : Type of Anaesthesia

Type	Frequency	Outcome
GA	9=20.45%	Good
LA	35=79.55%	2 recurrence

Majority of the cases were done under LA (79.55%) with only 2 cases of recurrence in this group noted.

Table 5: Number Of Burr-Hole

Number of hole	Frequency	Outcome
1	31	Good
2	13	Good
>2	0	-

A total of 31 out of the 44 had a single burr hole whereas 13 of them had 2holes sited and all the cases were irrigated intraoperatively. None of the patients had more than two burr holes.

Table 6: Drainage

Drain	Frequency	Percentage	Outcome
Yes	39	88.64	Good
No	5	11.36	Good

Table 7: Side of Hematoma

Side of Hematoma	Frequency	Percentage
Left	25	56.82
Right	12	27.27
Bilateral	7	15.91

DISCUSSION

A lot has been written about this subject in terms of its risk factors, clinical features, management options and recurrences with many issues still lacking clarity. Hence, our aim is to compare these arguments and findings with our experience in a newborn neurosurgical centre like ours in a sub- Saharan African environment.

Chronic subdural is indeed disease of the elderly being much commoner in the elderly group. Our study showed that it is very rare in the younger population. This is similar to what was obtained in the literature as documented by chronic subdural hematoma was found to be commoner among men than women. This is

mostly likely to be due to trauma and road traffic accident being the most implicated aetiologic factor which is commoner among males. Its predilection found among men as revealed by this study is also in keeping with what is found in the literature. It was also found to be much commoner in the left than the right. The left sided accounted for 56.82% and right 15-91% with the remainder having bi-hemispheric chronic subdural hematoma.

All our patients were treated with burr hole, saline irrigation and closed -system subdural drainage of the hematoma. Some had two burr holes sited (13) while some had one (31). We obtained good outcome in over 95% of our patients. There was no significant difference in outcome between those that had single or multiple burr holes. Majority of the cases were done under local anaesthesia and mild sedation. There was no significant difference between those done under general anaesthesia and local anaesthesia in terms of outcome in six months.

So we found out that simple burr hole under local anaesthesia will offer optimal surgical treatment with excellent outcome. This also helps to avoid the complications that may be associated with general anaesthesia. However our protocol did not compare this method of treatment with other forms of treatment such as twist drill, craniotomy or conservative treatment.

Recurrence of chronic subdural hematoma is nightmarish for neurosurgeons. Some studies attributed this to some factors like drainage and poor surgical technique. Markwalder and Seiler (1985) found no difference between drainage and no drainage of chronic subdural hematoma. Similar observation was also made by both Mezue et al (2011) and Wakai et al (1990). Some of these studies upheld drains as an essential component of the treatment that will reduce drastically recurrence rate. In our studies, however, we drained in 88.64% of the procedures and no difference in outcome was noticed in the recurrence rate. Generally, the outcome was good. Over 95% had good outcome based on Glasgow Outcome Score of five (5) at six months follow –up.

CONCLUSION

A single burr- hole with saline irrigation

and subdural drainage is adequate for an optimal treatment of chronic subdural no matter the size of the hematoma. This procedure under local anaesthesia has less morbidity with an excellent outcome.

There is obvious change in age pattern that is akin to western world with road traffic accident accounting for the aetiology in the majority of the patients.

However, there are some limitations in this study which include its retrospective nature and the study population size. A prospective study on the same subject is ongoing, initiated by the authors to give more elaborate work to fill up the deficiencies in this work.

We, however, therefore, recommend this simple form of treatment to neurosurgeons and this form of frontiers of treatment can be extended safely beyond the confines of an equipped neurosurgical centres, non-neurosurgical centres inclusive.

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