

Profile and Outcome of Bilateral versus Unilateral Chronic Subdural Haematoma

A.M. Koko, N.J. Ismail, A. Lasseini, B.B. Shehu

Department of Neurosurgery, Regional centre for Neurosurgery
Usmanu Danfodiyo University Teaching Hospital, Sokoto, Nigeria.

Abstract

Objectives. The objective of the study was to determine the characteristics and outcome of bilateral compared to unilateral chronic subdural haematoma.

Design. Comparative retrospective cross-sectional study.

Subjects. Patients with chronic subdural haematoma.

Methods. Records of cases of chronic subdural haematoma (CSH) treated from July 2015 to June 2019 were reviewed. Bio demographics, clinical presentations, imaging findings and outcomes were analysed using SPSS IBM version 20.0 for windows. Descriptive and crosstabs analysis was done, p set at <0.05 .

Results. Bilateral chronic subdural haematoma was identified in 24.7% (20/81) of the total eighty-one patients. The mean age of presentation was 58.9 ± 9.27 years in both groups ($p > 0.05$), Male patients accounted for 97.5% (79/81) and 91.4% (74/81) of cases occurred following pedestrian-motorcyclist accident. Bilateral chronic subdural haematoma was found to have high frequency of dysphasia and seizure compared to unilateral disease ($p = 0.023$). Unilateral chronic subdural haematoma has shorter duration of hospital stay in comparison to bilateral ($p = 0.024$). Bilateral group had more complications (recurrence) and co-morbidity (diabetes, hypertension); there is no statistical significance. The outcome was good (markwalder 0) in both groups in 88.4% of cases and p value of >0.05 .

Conclusions. Bilateral chronic subdural haematoma constitutes about one fourth of cases of chronic subdural haematoma seen and they demonstrate varied clinical characteristics. Though the outcome was excellent no difference was observed between the two groups

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I. Introduction

Chronic subdural haematoma is defined as a persistent liquefied haematoma in the subdural space more than three weeks duration that is generally encased by a membranous capsule.¹ As the average age of the population continues to rise; chronic subdural haematoma has become an increasingly prevalent neurosurgical disease seen by a wide variety of Neurosurgeons.² The incidence rate for chronic subdural haematoma is progressively increasing as the population ages and ranges from 3.4 per 100,000 in patients younger than 65 years of age, to 8-58 per 100,000 in patients older than 65 years.^{1,3,4} This age dependence is particularly relevant, as the latter population accounted for 12% of the overall population in United States of America.² It is worthy of note that the incidence of chronic subdural haematoma in the United States is expected to double in slightly over 25 years with similar trends worldwide.² A study in Benin, Nigeria revealed that chronic subdural haematoma accounts for 4.3% of neurosurgical cases observed.⁵

A hospital-based study on chronic subdural haematoma conducted in Lagos, Nigeria reported an increase in incidence due to availability of computerised tomography scan machines and appreciated life expectancy.⁴ Chronic subdural haematoma is a major cause of morbidity and mortality, yet it is treatable by simple techniques and the majority of patients improve rapidly following surgical intervention. It is therefore important to accurately assess complications, recurrences and other factors related to better treatment.⁶

Chronic subdural haematoma can be unilateral or bilateral, though unilateral chronic subdural haematomas are commonly seen, bilateral collections are not uncommon representing about 16-24% of cases of chronic subdural haematoma.^{7,8} Bilateral chronic subdural haematoma has been reported to be distinct with varied clinical characteristics and outcome compared to unilateral cases.^{9,10} This suggests that bilateral should be differentiated from unilateral haematoma collection to establish an appropriate surgical therapy and reduce disability and death associated with this common neurosurgical condition. There are few studies in the literature comparing the clinical characteristics and outcome of bilateral versus unilateral chronic subdural haematoma.¹¹

The most commonly employed techniques in the treatment of chronic subdural haematoma are twist drill craniostomy (less than 5mm in diameter), Burr hole craniostomy (5-30mm in diameter) and

craniotomy.^{12,13,14} Burr hole craniostomy, an evacuation via one or two Burr holes drilled over the site of the haematoma, is the most popular surgical technique World-wide.^{12,15,16} The aim of this study was to determine the clinical profile and outcome of surgical treatment of bilateral compared with unilateral chronic subdural haematoma in our centre.

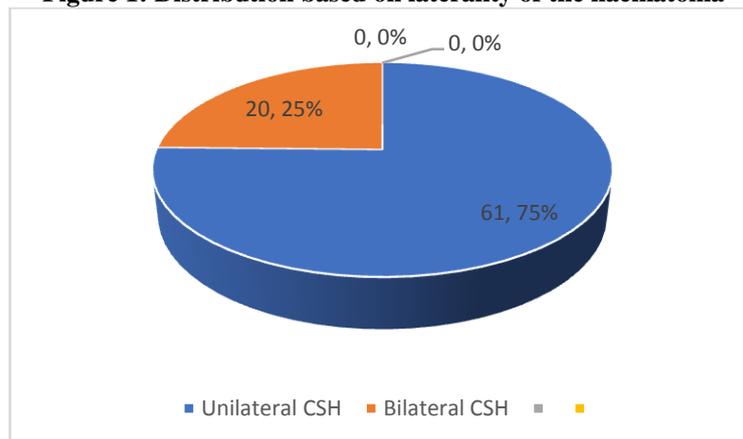
II. Material And Methods

Medical records of cases of chronic subdural haematoma treated in our centre from July 2015 to June 2019 were reviewed retrospectively. Bio demographics, clinical presentations, imaging findings and outcomes were analysed using SPSS IBM version 20.0 for windows. Descriptive and crosstabs analysis was done, p set at <0.05.

III. Results

We found a total of 81 patients managed over the study period. The mean age of presentation was 58.9 ± 9.27 years in both groups ($p > 0.05$) male patients accounted for 97.5% (79/81) and 91.4% (74/81) of cases occurred following pedestrian-motorcyclist accident, 6.2% (5/81) resulted from falls and 2.4% (2/81) had unknown aetiology. The most common clinical features common to both Bilateral and unilateral chronic subdural haematoma were alteration in level of consciousness in 90.1% (73/81) and headache in 87.7% (71). However bilateral haematoma was found to have high frequency of dysphasia and seizure compared to unilateral disease ($p = 0.023$). Unilateral chronic subdural haematoma has shorter duration of hospital stay in comparison to bilateral ($p = 0.024$). Bilateral group had more complication (recurrence) and co-morbidities (diabetes, hypertension); there is no statistical significance. The outcome was good (markwalder 0) in both groups in 88.4% of cases and p value of > 0.05 .

Figure 1: Distribution based on laterality of the haematoma



IV. Discussion

In both groups, the mean age of presentation and standard deviation of 58.9 ± 9.27 years of patients correspond with ages of chronic subdural haematoma reported in previous study in southern part of Nigeria.^{17,18} The mean age is slightly lower than those observed in developed countries. This may be due to relatively younger age of general population in developing countries like Nigeria, as well as higher rate of trauma seen in young individuals.¹⁹ In the current study, there is strong male preponderance (male 97.5% versus female 2.5%). This is consistent with the finding of other studies.^{20,21} This disproportionately high rates of trauma among males compared to females might be that males are more active and engaged in more risky outdoor activities in our environment, thereby increasing the risk of head trauma. In addition, there is theoretical possibility that higher levels of oestrogen in females may confer more protective effect on capillaries.²² Bilateral haematoma accounted for approximately one quarter (24.7%) of cases of chronic subdural haematoma found in this study. This corresponds with the findings of other studies.^{11,23}

The most common cause of chronic subdural haematoma in both groups was traumatic event, which agrees with previous studies.^{24,25} The few cases with unknown cause were probably from a trivial trauma that went unnoticed as none of the patients were on anticoagulant, antiplatelet or had coagulopathy. Patients with unknown aetiological factor had been reported in literature.²⁶

The prominent clinical presentation was altered level of consciousness and headache which may signify the presence of raised intracranial pressure. The predominance of features of elevated intracranial pressure in this study might be due to relatively young age of the patients, as these tend to occur more often in younger individuals than in the elderly. The brain atrophy in the elderly accommodates more haematoma without

rapid rise in intracranial pressure on the brain tissue, thus, the lower tendency towards increased intracranial pressure in the aged. This finding is comparable to a study in Zaria, Nigeria where Jimoh et al from the same geographic location with similar patient age and sex distribution like the index study found headache and altered level of consciousness as the commonest presenting symptoms of CSH.²⁰ Bilateral chronic subdural haematoma was found to have high frequency of dysphasia and seizure compared to unilateral. Dysphasia may be attributed to frequent affectation of the dominant hemisphere in bilateral as against unilateral cases that may or may not involve the dominant hemisphere. The high rate of seizure observed in bilateral haematoma may be due to overwhelming irritation of the cortex combined with elevated intracranial pressure. Similar finding was reported in previous study.¹¹

In the present study unilateral collection was found to have shorter hospital stay. However, bilateral cases were noticed to have high comorbidity and recurrence rate compared to unilateral. This finding agreed with the reports of previous study.²³ As in the previous study the outcome of treatment of chronic subdural haematoma was good in both unilateral and bilateral haematoma collections.²³

V. Conclusion

Bilateral chronic subdural haematoma constitute about one fourth of cases of chronic subdural haematoma seen and they demonstrate varied clinical characteristics. Though the outcome was excellent no difference was observed between the two groups

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