

Management and Outcome of Acute Subdural Hematoma in Gabriel Touré Hospital

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Abstract

Background: Traumatic Brain Injury (TBI) is a major health problem worldwide. It is the main cause of trauma mortality. Acute subdural hematoma (ASDH) has a reputation for being the most serious of all posttraumatic head injuries. Its frequency is estimated to be 1% to 5% of all head injuries and 22% of severe head injuries. The aim of this study was to assess the epidemiological, clinical and prognosis aspects of ASDH in our department. **Material and Methods:** This prospective study, from January to December 2019, included 57 patients admitted to the Gabriel Touré Teaching Hospital for ASDH. Patients underwent detailed clinical and radiological evaluation and ASDH was diagnosed by non-contrast computed tomography (CT) scan. Functional outcome was evaluated 6 months after injury by Glasgow Outcome Scale. **Results:** During the study period, 662 patients were admitted for TBI including 57 (8.61%) cases of ASDH. The mean age was 34 years with extremes of 2 and 77 years. There was a male predominance with 52 (91.2%). The main cause of trauma was motor vehicle accidents in 38 (66.6%) patients. According to the Glasgow coma scale (GCS), 33 (57.9%) patients were classified mild (**Table 2**). The thickness of the hematoma was more than 1 cm in 13 (22.8%) patients and less than 1 cm in 44 (77%) patients. Surgical treatment was performed in 13 (22.8%) patients. The outcome was favorable in 30 (52.6%) patients and the mortality rate was 33.3%. **Conclusion:** ASDH re-

mains a difficult challenge because of the high mortality. The mortality rate remains high particularly in patient with poor GCS score at admission.

Keywords

Acute Subdural Hematoma, Traumatic Brain Injury, Outcome

1. Introduction

Traumatic Brain Injury (TBI) is a major health problem worldwide. It is the main cause of trauma mortality [1] [2] [3]. The impact is much worse in low-income countries like Mali. Intracranial hematomas are a common and serious consequence of TBI and account for approximately 25% - 45% of severe, 3% - 12% of moderate cases and 1 in 500 patients in mild TBI [4]. The GCS is the widely clinical classification to determine the severity Of ASDH. Head CT scan is the diagnostic study of choice for ASDH and it allows an adequate diagnosis and associated brain and skull lesions. ASDH is associated with a worse prognosis, with increased in-hospital mortality and disability [5]. Acute subdural hematoma (ASDH) has a reputation for being the most serious of all posttraumatic head injuries. Its frequency is estimated to be 1% to 5% of all head injuries and 22% of severe head injuries. The aim of this study was to assess the epidemiological, clinical and prognosis aspects of ASH in our department.

2. Material and Methods

This prospective study, from January to December 2019, included 57 patients admitted to the Gabriel Touré teaching hospital for ASDH. Patients underwent detailed clinical and radiological evaluation and ASDH was diagnosed by non-contrast computed tomography (CT) scan. Functional outcome was evaluated 6 months after injury by Glasgow Outcome Scale (GOS) score.

3. Results

During the study period, 662 patients were admitted for TBI including 57 (8.61%) cases of ASDH. The mean age was 34 years with extremes of 2 and 77 years (Figure 1). There was a male predominance with 52 (91.2%). The main cause of trauma (Table 1) was motor vehicle accidents in 38 (66.6%) patients. According to the Glasgow coma scale (GCS), 33 (57.9%) patients were classified mild trauma (Table 2). The thickness of the hematoma was more than 1 cm in 13 (22.8%) patients and less than 1 cm in 44 (77%) patients. Surgical treatment was performed in 13 (22.8%) patients. The surgical technique included decompressive craniectomy in 10 patients (Figure 2) and trephination in 3 others. The mortality rate was 33.3%. According to the GCS score at admission the mortality rate was 100% in patients with GCS score of 3 - 8 (Table 3). The outcome was favorable in 30 (52.6%) patients according to the GOS classification (Table 4).

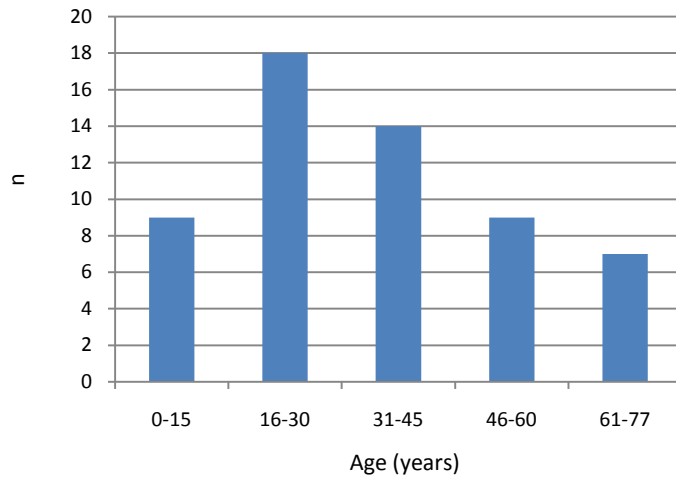


Figure 1. Distribution of patients according to the age.

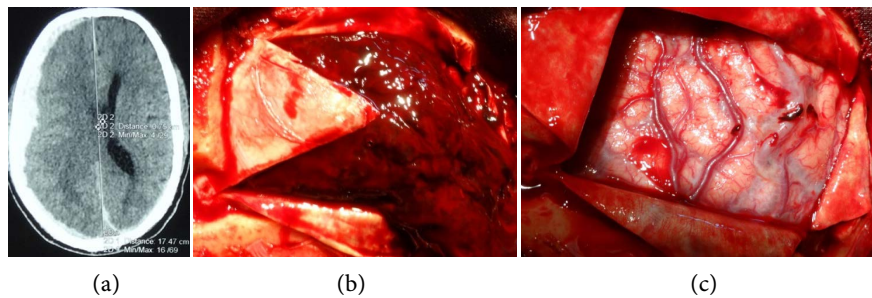


Figure 2. Preoperative CT scan showing ASDH with midline shift (a), operative photograph showing ASDH after opening of dura (b) and after removal of ASDH (c).

Table 1. Causes of trauma in 55 patients with ASDH.

Cause of trauma	n	%
Motor vehicle accidents	38	66.6
Falls	1	1.8
Assaults	4	7
Work accident	3	5.3
Domestic accident	9	15.8
Total	55	100

Table 2. GCS at admission.

GCS	n	%
13 - 15	33	57.9
6 - 12	21	36.8
3 - 8	3	5.3
Total	57	100

Table 3. Mortality according to the GCS at admission.

GCS	n	Mortality	%
13 - 15	33	5	15.2
6 - 12	21	11	52.4
3 - 8	3	3	100
Total	57	19	33.3

Table 4. GOS of 57 patients with ASDH.

GOS	n	%
5	30	52.6
4	5	8.8
3	3	5.3
2	0	0
1	19	33.3
Total	55	100

4. Discussion

Head trauma remains the leading cause of death and disability worldwide. ASDH has a reputation for being the most serious of all posttraumatic head injuries because of the high mortality and limited recovery. The frequency of ASDH in this study was 8.6% of patients admitted with TBI. In the literature this frequency varies approximately between 10% and 20% [6] [7] [8]. In our study, age distribution had a peak for 16 - 30 years old. In comparison with the literature, elderly patients over 45 years old are more frequent [9]. Most ASDH are caused by motor vehicle accidents that are more frequent in the younger [10] [11]. In our study ASDH was caused by motor vehicle accident in 38 (66.6%) patients followed by domestic accident in 9 (15.8%) patients and assault in 4 (7%) patients. Contrary to what is found in the literature most of patients with ASDH in our study were admitted with GCS at 13 - 15 [12] [13]. Surgical treatment was performed in 13 (22.8%) patients. Surgical indication was based on the GCS score and CT scan finding with thickness of hematoma more than 1 cm and midline shift more than 5 mm. The small number of operated patients is due to the fact that the majority of patients (57.9%) had mild trauma which would also explain the high rate of good recovery according to the GOS. In the literature the mortality rate ranged from approximately 30% - 60% [14] in accordance with mortality rate at 33.3% in our study. The mortality rate according to the GCS score was 100% in patients with GCS score at 3 - 8, 52.4% with GSC at 9 - 12 and 15.2% with GCS at 13 - 15 in our study.

5. Conclusion

ASDH remains a difficult challenge because of the high mortality. The mortality rate remains high particularly in patient with poor GCS score at admission.

Acknowledgements

The authors declare no conflict of interest.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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