

SUMMARY

Approximately 1.4 million emergency department (ED) visits for traumatic brain injury (TBI) occur each year in the United States. Traumatic extradural hematoma (EDH) is a well recognized surgical complication of head trauma. The incidence of EDH among traumatic brain injury (TBI) patients has been reported to be in the range of 2.7 to 4 %.

So, The aim of this prospective study is to study the role of emergency medicine department in the management of cases with acute traumatic extradural hematomas.

The present study included 77 patients. Their ages ranged from 9 months-55 years with a mean \pm SD of (26.43 \pm 14.06) years. They comprised 65 males (84.4%) and 12 females (15.6 %). In the current study it had been shown that the reported mechanisms of injury included road traffic accidents in 54 patients (70.1%), assaults in 11 patients (14.3%) and fall from height in 5 patients (6.5%).

On admission, GCS in the present study ranged from 3.0 -15.0 with a mean of Mean of (12.58 \pm 3.25). According to GCS, severity of traumatic brain injury was classified into severe in 11 cases (14.3%), moderate in 17 cases (22.1%) and mild in 49 cases (63.6%) .

The reported clinical signs in the present study included headache in (28) patients (36.4%), vomiting in 57 patients (74.0%), disturbed level of consciousness in 38 patients (49.4%), focal neurological lesion in 11 patients (14.3%), pupillary changes ranged from bilateral equal reactive to light in 60 patients (77.9%) to one fixed one reactive 8 patients (10.4%) and bilateral dilated non reactive in 9 patients (11.7%), and seizures in 19 patients (24.7%).

CT findings in the studied patients revealed a hematoma size ranging from (9.4 to 121.7 cm³). Site of hematoma was temporal in 27 patients (35%), parietal in 24 patients (31%), temporoparietal in 12 patients (15.5%), frontal in 9 patients (11.7%), posterior fossa in 3 patients(4%), occipital in one patient (1.3%) and multiple in one patients (1.3%).

Seventy four patients (96%) had unilateral lesions while 3 patients (4%) had bilateral lesions and multiple in one patient (1.3%). Skull fractures were reported in 48 patients (62.3%) and delayed onset extradural hematoma was reported in 3 patient (3.9%).

Management interventions in the present study included conservative treatment in 46 cases (59.7%) and surgical interventions in 31 patients (40.3%). Considering the study outcome, 7 patients out of 77 (9.1%) had unfavorable outcome with 3 patient reported dead (3.9%).

Comparison between patients with favorable and unfavorable outcome had shown that patients with favorable outcome had significantly younger age (26.70 \pm 14.52 vs. 43.71 \pm 8.38; p= 0.026). However, Comparison between sex distribution in both outcome groups didn't reveal statistically significant differences.

Comparison between patients with favorable and unfavorable outcome had regarding the pupillary reaction had shown that patients with unfavorable outcome had significantly higher frequency of abnormal pupillary reaction. In respect to the relation between

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outcome and GCS and trauma severity, it was found that patients with favorable outcome had significantly higher GCS when compared with patients with unfavorable outcome.

Also, unfavorable outcome was associated with more severe brain injury. Regarding the relation between patients' outcome and CT findings, it was found that unfavorable outcome was associated with more hematoma volume, PFEDH, bilateral hematoma and multiple hematoma sites.

CONCLUSIONS AND RECOMMENDATIONS

- Emergency transfers in our region are organized through ambulance control and are categorized as emergencies.
- The time taken for transfer of patients with acute traumatic brain injuries to a center with a neurosurgical facilities remains slow and unorganized in Egypt.
- A clear, simple, and organized approach is needed when managing a severely injured patient. The primary survey promulgated in Advanced Trauma Life Support (ATLS) provides such an approach.
- The use of CT scan in head trauma revealed a new class of EDH patients who may be treated conservatively.
- Most cases of EDH had a favorable outcome.
- Patients with TBI should be transported directly to a trauma center without delay.
- CT should be carried out within 15-30 minutes of arrival in the Emergency department.
- The time between the occurrence of EDH and surgical intervention is crucial in determining the outcome.
- Initial management of EDH in specialized emergency center is very important as regard prognosis.
- An epidural hematoma (EDH) greater than 30 cm³ should be surgically evacuated regardless of the patient's (GCS) score.
- An EDH less than 30 cm³ and with less than a 10-mm thickness and with less than a 5-mm midline shift (MLS) in patients without focal deficit can be managed conservatively with serial computed tomographic (CT).
- A delayed EDH in our study is defined as EDH that is not present on the initial CT scan, but is found on subsequent CT.
- Absence of qualified emergency physicians, shortage of trauma centers with neurologic services and delayed transport are the main causes of delayed EDH.
- A nationwide multicenter study is recommended to determine the exact characteristics of EDH in Egypt.
- Well designed campaigns are recommended to raise the popular awareness about the magnitude of the problem and its detrimental consequences.