Pediatric intracranial epidural hematoma case series

A retrospective study of 228 pediatric patients of EDH from July 2007 to August 2017 was performed. Patients were evaluated in terms of demographic profile, clinical features, pupillary size and reaction, computed tomography findings, operative measures, and several other parameters. Neurological status was assessed using motor component (M) of Glasgow Coma Scale score. Best motor response was considered as a criterion to classify severity of traumatic brain injury and for the assessment of outcome.

Most of the patients were in the age group of 13-18 years (n = 122, 53.5%). Majority of them were male (n = 182, 79.8%). The commonest mode of injury was fall from height (n = 116, 50.9%) followed by road traffic accident (n = 92, 40.4%). Most common site of hematoma was frontal region (n = 66, 28.9%) followed by parietal region (n = 54, 23.7%). The volume of hematoma was between 30 and 50 mL in majority of the patients (n = 186, 81.6%), and most of the patients had a motor responses of M5 (n = 88, 38.6%) and M6 (n = 108, 47.4%). The association between hematoma site and volume was not significant ($\chi2 = 5.910$, $p = 0.749$), whereas statistically significant association was noted between volume of hematoma and motor response ($\chi2 = 93.468$, $p \leq 0.001$), volume and age ($\chi2 = 7.380$, $p \leq 0.05$), and volume to time between trauma and surgery ($\chi2 = 8.469$, $p \leq 0.05$). Maximum mortality was in patients of low motor (M1-M3) response and who were operated 24 h after injury.

Mortality in patients of EDH can be significantly reduced with gratifying results if operated early. Best motor response at presentation, pupillary abnormalities, time between injury to surgery, and location of hematoma have been identified as the important factors determining outcome in patients of EDH [1)].

Ben Abraham et al., reviewed a 11-year experience with 61 consecutive children <16 years old with head trauma and isolated AEH. Treatment followed a standard advanced trauma life support protocol. A medical history was obtained, and all patients underwent neurosurgical and physical evaluations. CT scans were performed, as were laboratory tests which included arterial blood gases, glucose, electrolytes (K(+), Na(+)), hemoglobin and coagulation studies. Evaluation of the data collected on cause of injury, interval between trauma occurrence and presentation, clinical symptoms, Glasgow Coma Scale (GCS) scores, vital signs, laboratory test results, physical findings and surgical versus conservative management revealed that the best single predictors of outcome following AEH were the GCS and focal neurological deficits. Of all laboratory data obtained on admission, the blood potassium, pH and glucose test results correlated significantly with prognosis. Prognosis can be adequately and expeditiously estimated by selected markers within a comprehensive evaluation of children with AEH [2)].

One hundred forty-six consecutive patients operated on for extradural hematoma (EDH) from 1979 through 1991 were analyzed. This series included patients from both before and after the advent of computed tomography (CT). There were 102 boys and 44 girls, aged 1-16 years. All patients underwent plain skull X-radiography. CT scans were obtained in 72 cases and angiography was performed in 10. Thirty patients with EDH did not have skull fractures. Falls were predominant among the modes of injury. Thirty-seven percent of patients had a lucid interval. The overall mortality was

10%. The mortality rates in the CT and plain X-ray groups were 6% and 16% respectively. There was only one death in patients who did not have a lucid interval. The Glasgow Coma Scale scores of all patients who died in this series were less than 8. They concluded that mydriasis, comatose state at the time of operation, and a lucid interval are ominous signs in the prediction of outcome [3].

A series of 75 children with traumatic extradural haematomas operated between 1982 and 1988 were analysed in detail. The overall mortality rate was 17%. CT scan constituted a valuable tool for an early and correct diagnosis, and the mortality rate declined to 9% in the post-CT era. The outcome was found to be predominantly affected by the preoperative neurological status, by the duration of the time interval between onset of coma and surgical intervention, and mainly by the presence of associated brain lesions [4].

1)
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