

A RETROSPECTIVE RESEARCH TO ESTABLISH THE CLINIC-DEMOGRAPHIC PROFILE AND OUTCOME OF INDIVIDUALS WHO PRESENTED WITH POSTERIOR FOSSA EXTRA DURAL HEMATOMA

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Abstract

Aim: to determine the prevalence and clinical profile of patients presented with posterior fossa extra dural hematoma.

Materials and methods: This retrospective observational research was carried at the Department of Neurology, Apex Hospital, Jaipur, Rajasthan, India. The data for this research was collected during a 2-year period and was analyzed. The clinical presentation, admission Glasgow Coma Scale (GCS), mechanism of injury, type of intervention, and postoperative prognosis were all examined retrospectively in the data. The Glasgow Outcome Score (GOS) was used to evaluate the outcomes at the time of discharge and at three months after discharge.

Results: There were 39 patients in all, 28 of them were men and 11 of whom were girls. There were 29.21 years between the mean ages of the patients. At the time of admission, 24 patients had GCS 13-15, followed by 9 patients with GCS 9-12, and only 5 patients had GCS less than 9. The mean EDH volume was 28.7 milliliters. Thirty-six patients were operated on, and five patients were treated conservatively.

Conclusion: Epidural haematomas in the posterior fossa are a rather rare occurrence. Because of the limited volume of the posterior fossa and the presence of critical tissues inside it, mortality may be significant if the haematoma is not detected and treated promptly.

Keyword: extradural hematoma, posteriors fossa, GCS, trauma

Introduction

Head injury is a dynamic process that results in a chain of events that may develop extremely quickly, resulting in a fatal end, or slowly, resulting in a protracted morbid course of symptoms and complications.

Extradural hematoma (EDH) is one such secondary occurrence, and EDH of the Posterior fossa (PFEDH) in particular may develop without warning, resulting in a precipitous decline that can lead to death or a bad prognosis in the majority of patients.

The incidence of posterior fossa epidural haematomas among intracranial epidural haematomas has been found to range from 4 percent to 7 percent, according to the literature. Obstructive hydrocephalus, which is evident on computed tomography (CT) scan in only 30% of cases, develops early in the course of the disease because of the restricted volume of

the posterior fossa, which causes patients to degenerate early^[1].

The location, size, and time course of the hematoma all influence how the hematoma manifests itself neurologically. The majority of individuals develop symptoms in less than 24 hours, with 60-75 percent experiencing symptoms within 12 hours after the event^[2]. On first presentation, the most frequent complaints/problems include lucid interval, headache, vomiting, altered sensorium, neuro-deficit, bradycardia and proptosis, with or without proptosis in certain cases^[3, 4].

The incidence of traumatic posterior fossa extradural hematoma is rising, and conservative treatment is yielding favourable outcomes in both children and adults, according to the literature. Skull X-rays and CT scans are important diagnostic techniques in the evaluation of patients who have sustained a head injury. The choice between surgery and observation is still up in the air, according to some experts. The purpose of this research was to evaluate the frequency of posterior fossa extradural hematoma as well as the clinical characteristics of individuals who presented with this condition.

Materials and methods

This retrospective observational research was carried at the Department of Neurology, Apex Hospital, Jaipur, Rajasthan, India. The data for this research was collected during a 2-year period and was analyzed.

Ethical approval and informed consent

The study protocol was reviewed by the Ethical Committee and granted ethical clearance.

Methodology

The records were retrospectively analyzed for clinical presentation, admission Glasgow Coma Scale (GCS), mode of injury, type of intervention and postoperative outcome. Outcomes were assessed on the basis of Glasgow Outcome Score (GOS) at the time of discharge and at 3 months.

Statistical analysis

The data was entered in the form of a data matrix in Microsoft Excel® and analysed statistically using IBM® SPSS® version 20.0.0. Descriptive statistics were calculated as frequencies for categorical variables and means and standard deviation for continuous variables.

Results

Table 1: Clinic-demographic profile of the study population

Gender	N (%)
Male	28 (71.8%)
Female	11 (28.2%)
Clinical presentation at Admission	
Headache	14 (35.9%)
Vomiting	17 (43.6%)
Drowsiness	5 (12.8%)
Incontinence	3 (7.7%)
Age (Mean ± SD)	28.21±3.61
EDH Volume (ml)	27.8±2.81

Table 2: Distribution of mode of injury

Mode of injury	N (%)
RTA	27 (69.2%)
Fall	10 (25.6%)
Others	2 (5.1%)

Table 3: Distribution of GCS at admission and at discharge

GCS at Admission	N (%)
<9	5 (12.8%)
9-12	10 (25.6%)
13-15	24 (61.5%)

Table 4: Distribution of mode of management

Mode of Management	N (%)
Conservative	4 (10.2%)
Surgery	35 (89.7%)

Table 5: Distribution of outcome at 3 months

GCS	N (%)
Favorable	33 (84.6%)
Unfavorable	4 (10.2%)
Mortality	2 (5.1%)

Discussion

The treatment of traumatic brain injury has changed significantly over the last several decades, owing to increased understanding of subsequent neuronal damage to the brain and improvements in critical care unit facilities. Increased advancements in radiological technology have contributed to the accurate and timely identification of diseases, as well as improved patient outcomes^[5].

The researchers discovered a total of 146 instances of EDHs, of which only 39 (26.7.0 percent) were identified in the posterior fossa. Sunay *et al.*^[6] discovered a male to female ratio of 3.1:1, which is quite similar to the findings of our research. In a similar vein, Prashant *et al.*^[7] shown in their research that men are more likely than females to suffer from head trauma as a result of males being exposed to more traffic and outdoor activities than girls. Extradural hematoma was seen in a 4:1 ratio of males to females, according to Nath HD *et al.*^[8].

The presence of an occipital haematoma, swelling, the location of the impact, and often the Battles sign are all indicators of the condition's diagnosis. In order to diagnose these haematomas, it is necessary to observe the patient and repeat the procedure if there is a fracture of the occipital bone. Changes in GCS or severe headaches with vomiting, as well as new onset cerebellar symptoms are related characteristics that aid in the diagnosis of this condition. Neck stiffness and sleepiness were shown to be the most frequent clinical symptoms in certain trials, according to the findings^[9]. The CT scan continues to be the preferred method of detection for these haematomas.

With regard to the global cognitive score (GCS) upon presentation, the majority of participants in both groups had a GCS more than 8, while both our study and that of Bozbuga M *et al.*^[10] have revealed that more than two thirds have a GCS greater than 14. For the treatment of symptomatic PFEDH, surgery continues to be the gold standard. It is possible that a suboccipital craniectomy or a craniotomy will be performed depending on the extent of the haematoma^[11].

Patients who are asymptomatic and have excellent GCS may benefit from conservative treatment strategies. The patient should be maintained under careful observation in the

neurosurgical critical care unit until he or she recovers (ICU). Several case reports of these haematomas that cleared spontaneously without the need for medical intervention have been published in the medical literature^[12]. The speed with which the disease manifests itself and the initial GCS are the most important variables in determining the overall prognosis. Acute haematomas are associated with a significant mortality rate, which may vary from 12 percent to 70 percent.

Conclusion

Epidural haematomas in the posterior fossa are a rather rare occurrence. Because of the limited volume of the posterior fossa and the presence of critical tissues inside it, mortality may be significant if the haematoma is not detected and treated promptly. The clinical progression is quiet and gradual, but the deterioration is abrupt and severe, and it may be deadly if not treated quickly and effectively. The importance of early acknowledgment cannot be overstated. It is necessary to conduct a prospective controlled trial research in order to determine the critical volume of posterior fossa epidural haematomas that should be submitted to surgery.

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