THE PREVALENCE AND CLINICAL PROFILE OF PATIENTS PRESENTED WITH POSTERIOR FOSSA EXTRA DURAL HEMATOMA IN TERTIARY CARE HOSPITAL: A RETROSPECTIVE OBSERVATIONAL STUDY.

Dr. Deepak Karn¹

¹Assistant Professor and HOD, Department of Neurosurgery, Shri Krishna Medical College and Hospital Muzaffarpur, Bihar, India

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Corresponding author: Dr. Deepak Karn

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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: The present retrospective observational study was conducted in the Department of Neurosurgery, SKMCH, Muzaffarpur, Bihar, India. 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

Results: Of these 39 patients, 28 were males and 11 females. The mean age of patients was 29.21 years. 24 patients had GCS 13-15 at admission followed by 9 with GCS 9-12 and only 5 of them had GCS <9 at admission. Mean EDH volume was 28.7 ml. 36 patients were operated, 5 patients managed conservatively.

Conclusion: The posterior fossa is an uncommon site for epidural haematomas. Due to the small volume of the posterior fossa and contained important structures mortality can be high if the haematoma is missed. Clinical progress is silent and slow, but the deterioration is sudden and quick to become fatal if not promptly treated. Early recognition is extremely important.

Keywords: Extradural hematoma, Posteriors fossa, GCS, Trauma

Introduction

Head injury is a dynamic process and leads to a chain of events, which can evolve very rapidly leading to a catastrophic outcome or slowly leading to a prolonged morbid course.

Extradural hematoma (EDH) is one such secondary event and EDH of Posterior fossa (PFEDH) in particular can evolve without any warning and then a precipitous deterioration leads to death or poor outcome.

The incidence of posterior fossa epidural haematomas among intracranial epidural haematomas has been reported to be 4% to 7%. Since the volume of the posterior fossa is limited, patients deteriorate early with the development of obstructive hydrocephalus, which is visible in the computed tomography (CT) scan in only 30 percent of cases.ⁱ

Neurological presentation varies according to location, size and time course of the hematoma. Mostly patients become symptomatic in less than 24 hours, with 60–75% less than 12 hours of trauma.ⁱⁱ The most common complaints/problems on initial presentation, are lucid interval, headache, vomiting, altered sensorium, neuro-deficit, and bradycardiaⁱⁱⁱ, and may have proptosis.^{iv}

There have been an increasing number of cases of traumatic posterior fossa extra dural hematoma treated conservatively with good results both in children and in adults. The valuable tools of assessment in patient presenting with head injury are skull X-rays and CT scan. The decision between surgery and observation is still subject of debate. The objective of this study was to determine the prevalence and clinical profile of patients presented with posterior fossa extra dural hematoma.

Materials and Methods

The present retrospective observational study was conducted in the Department of Neurosurgery, SKMCH, Muzaffarpur, Bihar, India.

The study protocol was reviewed by the Ethical Committee and granted ethical clearance. After explaining the purpose and details of the study, a written informed consent was obtained.

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. The association between the categorical variables was explored using

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 management of traumatic brain injury has evolved dramatically over the past few decades as a result of knowledge of secondary neuronal injury to brain and due to improvement of facilities in critical care units. There has been immense improvement in the radiological facilities which had added to proper and in time diagnosis of pathologies.^v

We found a total of 146 cases of EDHs, of which only 39 (26.7.0%) were located in the posterior fossa. Sunay et al.^{vi},

observed a male to female ratio of 3.1:1, which closely correlates with the results of our study. Similarly Prashant et al.^{vii} also showed in his study that more males are suffered from head trauma as compared to females because of more exposure of males to traffic and outdoor activities then females. Nath HD et al.^{viii} documented a 4:1 of males and females with extradural hematoma.

Presence of occipital haematoma, swelling, site of impact and often Battles sign are clue to its diagnosis. Fracture of the occipital bone is an important sign that mandates observation and repeat scan later to diagnose these haematomas. Change in GCS or severe headache with vomiting and new onset cerebellar signs are associated features that help to clinch the diagnosis. Some studies have shown that neck stiffness and drowsiness were the commonest clinical signs.^{ix} CT scan remains the choice of investigation to detect these haematomas.

In terms of GCS at presentation the majority are more than score of 8 in all the groups whereas both ours and Bozbuga M et al.^x have shown that more than two thirds are having GCS more than 14. Surgery remains the gold standard for the treatment of symptomatic PFEDH. This may be in the form of suboccipital craniectomy or craniotomy depending on the size of the haematoma.^{xi}

Conservative management is an option if the patient is asymptomatic and has good GCS. The patient should be kept under close monitoring in the neurosurgical intensive care unit (ICU). There are some case reports in the literature about these haematomas which resolved spontaneously without any intervention.^{xii} The rapidity of onset and initial GCS are the main factors that determine the overall prognosis. Acute haematomas often carry a high mortality with the range of 12%-70%.

Conclusion

The posterior fossa is an uncommon site for epidural haematomas. Due to the small volume of the posterior fossa and contained important structures mortality can be high if the haematoma is missed. Clinical progress is silent and slow, but the deterioration is sudden and quick to become fatal if not promptly treated. Early recognition is extremely important. Prospective controlled trial study is required to find the critical volume of the posterior fossa epidural haematomas to be subjected for the surgery.

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