

Original Article

Clinical Features of Patients presented with Extra Dura Haematoma Attended at a Tertiary Care Hospital in Dhaka City

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Abstract

Background: The clinical presentation of head injury may vary.

Objective: The purpose of the present study was to see the clinical features of patients presented with extra dural haematoma.

Methodology: This cross-sectional study was conducted in the Department of Neurosurgery at Dhaka Medical College Hospital, Dhaka, Bangladesh from January 2010 to June 2011 for a period of one year and six months. All patients who underwent surgery with traumatic head injury having extradural haematoma were included in the study. The clinical features of the patients were recorded.

Result: Eighty (80) patients of traumatic head injury within and after 24 hours of head injury were enrolled in this study. In this study unconsciousness was in 32(40.0%) cases. However, convulsion was found in 12 (15.0%). Vomiting was the most common presenting feature which was 71(88.7%) cases. Headache was reported in 48(60.0%) cases. The normal pupillary response was found in 42(52.5%) cases. The rest 38(47.5%) cases were dilated pupil.

Conclusion: In conclusion vomiting is the most common clinical feature of patients presented with extra dura haematoma. Vomiting followed by unconsciousness and headache.

Keywords: Extradural haematoma; traumatic head injury; clinical features

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Introduction:

Head injury is a serious health problem in all nations¹. It is a significant factor for approximately half of all deaths related to trauma and the main cause of head

trauma includes road traffic accident, assaults, fall from height, sports injuries and industrial accidents. Extradural haematomas (EDH) develops in 1.0 to 3.0% of all major head injuries²⁻⁴.

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Extradural haematoma can result from injury to the middle meningeal artery, the middle meningeal vein, the diploic veins or the venous sinuses⁵. Historically bleeding from the middle meningeal artery has been considered the main source for EDH⁶. Extradural haematoma occurs in 2% of all serious head injuries⁷; however, it is uncommon in infants and is associated with skull fracture⁸.

Most typical clinical feature is the presence of lucid interval, during which headache, restlessness, nausea, vomiting, vertigo, confusion, poor reactivity or convulsion are observed⁹. A head injury patient had only temporary loss of consciousness and was left asleep may sometimes be found dead in the bed next morning because of slowly developing extradural haematoma¹⁰. The earliest neurosurgical abnormality other than disturbance of consciousness is pupillary abnormality, which amounts to 90.0% for mydriasis on the side of haematoma⁵. It provides an important finding and helps in the localization of haematoma¹⁰. This present study was undertaken to see the clinical features of patients presented with extra dura haematoma.

Methodology:

This cross-sectional study was carried out from January 2010 to June 2011 for a period of one year and six months. This study was carried out in the Department of Neurosurgery at Dhaka Medical College Hospital, Dhaka, Bangladesh. All patients who underwent surgery with traumatic head injury having extradural haematoma were included in the study. Purposive sampling technique was done. Patients with traumatic extradural haematoma diagnosed clinically by classical presentation of EDI-I and radiologically by non-contrast CT scan of brain all of whom underwent surgery. In all cases traumatic extradural haematoma were supratentorial. Non-traumatic extradural haematoma, patients with bilateral extradural haematoma, posterior fossa extradural haematoma and patients on anticoagulant therapy were excluded from this study. At admission, a detailed history of the illness was taken from the patients/patient's attendants by face-to-face interview with the help of a pre-formed questionnaire. Questionnaire was prepared with key variables like age, sex and mode of injury. All the data were checked and edited after collection. Then the data were entered into computer

and statistical analysis of the results was obtained by using window based computer software devised with Statistical Packages for Social Sciences (SPSS-16) (SPSS Inc, Chicago, IL, USA). Prior to the commencement of this study, the ethical committee of Dhaka Medical College, Dhaka, approved the thesis protocol. The aims and objectives of the study along with its procedure, risks and benefits of this study were explained to the respondents in easily understandable language and then written consent was taken from each. It was assured that all information and records would be kept confidential and the procedure would be helpful for the neurosurgeon and the patients in subsequent management.

Result:

Eighty (80) patients of traumatic head injury within and after 24 hours of head injury were enrolled in this study. 7(8.7%) patients were in the less than or equal to 10 years age group. 20(25.1%) patients were present in age group of 11 to 20 years. 19(23.8%) patients were in age group of 21-30 years. 20(25.1%) patients were present in age group of 31 to 40 years. 7(8.7%) patients were in the 41-50 years age group and more than 50 years in each. In this study the patient's age ranged from 3 years to 64 years (Table 1).

Table-I
Age Distribution of the Study Population (n=80)

Age Group	Frequency	Percent
0-10 years	7	8.7
11-20 years	20	25.1
21-30 years	19	23.8
31-40 years	20	25.0
41-50 years	7	8.7
>50 years	7	8.7
Total	80	100.0

In this study unconsciousness was in 32(40.0%) cases. However, convulsion was found in 12 (15.0%). Vomiting was the most common presenting features which was 71(88.7%) cases. Headache was reported in 48(60.0%) cases (Table 2).

Table-III

Clinical Presentation of the Study Population (n=80)
Clinical Presentation

	Frequency	Percent
Unconscious	32	40.0
Convulsion	12	15.0
Vomiting	71	88.7
Headache	48	60.0

Multiple responses analysis

The pupillary response to light of the patients after admission in the hospital were recorded. The normal pupillary response was found in 42(52.5%) cases. The rest 38(47.5%) cases were dilated pupil (Table 3).

Table-III

Pupillary Response among the Study Population

Pupillary Response	Frequency	Percent
Normal	42	52.5
Dilated	38	47.5
Total	80	100.0

Discussion:

Extradural hematoma (EDH) accounts for 2.0% of all head injuries⁸. In selected patients conservative management may be a feasible option. Although several reports have described successful conservative management of epidural hematoma, surgical evacuation constitutes definitive treatment of this condition⁹. Evacuation of the hematoma, coagulation of bleeding sites, and inspection of the dura follows the craniotomy. The dura is then tented to the bone and occasionally; epidural drains are employed for 24–48 hours¹⁰.

In this study eighty (80) patients of traumatic head injury within and after 24 hours of head injury were enrolled in this study. In this 7(8.7%) patients were in the less than or equal to 10 years age group. 20(25.1%) patients were present in age group of 11 to 20 years. 19(23.8%) patients were in age group of 21-30 years; however, 20(25.1%) patients were present in age group of 31 to 40 years. 7(8.7%) patients were in the 41-50 years age group and more than 50 years in each. In this study the patient's age ranged from 3 years to 64 years. Extradural haematomas (EDH) is the most common in the young male in the second and third decades of life¹¹. Extradural haematomas (EDH)

usually occurs in young adults, and is rare before age 2 years or after age 60, perhaps because the dura is more adherent to the inner table in these groups¹³.

The extradural haematoma is a collection of blood between the skull and the dura mater. It is caused by a ruptured artery or vein in the epidural space as a result of a fracture of the skull at the moment of the impact in 60.0 to 90.0% of cases¹⁴. In children fractures are less common¹⁵.

In this study unconsciousness was in 32(40.0%) cases. However, convulsion was found in 12 (15.0%). Vomiting was the most common presenting features which was 71(88.7%) cases. Headache was reported in 48(60.0%) cases. Patients with EDH who are conscious have a very low mortality⁷. Only patients with loss of consciousness are at risk for the serious complication of herniation¹¹. However, unconsciousness is the most common presentation of EDH patients. Furthermore there are several others clinical presentation are found in traumatic head injury. Among these presentation convulsion is a frequently reported in several studies⁹⁻¹³. This is due to the irritation in the meninges. In this study vomiting is reported in a significant number of patients. Therefore traumatic head injury followed by vomiting is not a good sign. In this situation proper management is essential for these patients.

Conclusion:

In conclusion vomiting is the most common clinical features of patients presented with extra dura haematoma is vomiting followed by unconsciousness and headache. Further large scale multicenter study should be carried out.

References:

1. Khaled CN, Raihan MZ, Chowdhury FH, Ashadullah AT, Sarkar MH, Hossain SS. Surgical management of traumatic extradural haematoma: Experiences with 610 patients and prospective analysis. *The Indian Journal of Neurotrauma*. 2008 Dec 1;5(2):75-9
2. Ayub S, Ali M, Ilyas M. Acute extra dural haematoma: factors affecting the outcome. *Journal of Postgraduate Medical Institute (Peshawar-Pakistan)*. 2011 Jul 25;19(2):208-211
3. Chesnut R, Ghajar J, Gordon D. Surgical Management Of Acute Epidural Hematomas. *Neurosurgery*. 2006 Mar;58(3):S2-7
4. Hyder AA, Wunderlich CA, Puvanachandra P, Gururaj G, Kobusingye OC. The impact of traumatic brain injuries: a global perspective. *NeuroRehabilitation*. 2007 Jan 1;22(5):341-53.

5. Gean AD, Fischbein NJ, Purcell DD, Aiken AH, Manley GT, Stiver SI. Benign anterior temporal epidural hematoma: indolent lesion with a characteristic CT imaging appearance after blunt head trauma. *Radiology*. 2010 Oct;257(1):212-8.
6. Liu JT, Tyan YS, Lee YK, Wang JT. Emergency management of epidural haematoma through burr hole evacuation and drainage. A preliminary report. *Acta neurochirurgica*. 2006 Mar 1;148(3):313-7.
7. Bullock MR, Chesnut R, Ghajar J, Gordon D, Hartl R, Newell DW, Servadei F, Walters BC, Wilberger JE. Surgical management of acute subdural hematomas. *Neurosurgery*. 2006 Mar 1;58(suppl_3):S2-16.
8. Greenberg MS. Epidural Haematoma. In: *Handbook of Neurosurgery*, 6th ed, New York: Thieme, 2010
9. Babu ML, Bhasin SK, Kumar A. Extradural hematoma-an experience of 300 cases. *JK Science*. 2005;7(4):205-7.
10. Jamous MA, Aziz HA, Al Kaisy F, Eloqayli H, Azab M, Al-Jarrah M. Conservative management of acute epidural hematoma in a pediatric age group. *Pediatric neurosurgery*. 2009;45(3):181-4.
11. Cheung PS, Lam JM, Yeung JH, Graham CA, Rainer TH. Outcome of traumatic extradural haematoma in Hong Kong. *Injury*. 2007 Jan 1;38(1):76-80.
12. Tsang KK, Whitfield PC. Traumatic brain injury: review of current management strategies. *British Journal of Oral and Maxillofacial Surgery*. 2012 Jun 1;50(4):298-308.
13. Le Roux AA, Nadvi SS. Acute extradural haematoma in the elderly. *British journal of neurosurgery*. 2007 Jan 1;21(1):16-20.
14. Duthie G, Reaper J, Tyagi A, Crimmins D, Chumas P. Extradural haematomas in children: a 10-year review. *British journal of neurosurgery*. 2009 Dec 1;23(6):596-600.
15. Mezue WC, Ndubuisi CA, Chikani MC, Achebe DS, Ohaegbulam SC. Traumatic extradural hematoma in Enugu, Nigeria. *Nigerian Journal of Surgery*. 2012;18(2):80-4.