

CLINICAL PATTERN OF PAEDIATRIC HEAD INJURY IN SOKOTO

Neurosurgery

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ABSTRACT

Background: Paediatric head injury is a common traumatic cause of morbidity mortality globally. Aetiological mechanism ranges from road traffic crash to falls depending on geographical location.

Objective of the study: To describe the clinical pattern of paediatric head injury in our settings.

Methods: A retrospective study of cases of head injury in children who had neurosurgical intervention in our centre between January 2013 to December 2017. Relevant clinical and radiological information was obtained from patient's medical records and analysed.

Results: We had 43 patients over the study period, males constituted the majority with a male-to-female ratio of 2.9:1. Road traffic crash was the common cause of head injury (33/43) followed by fall into a well (6/43). The indications for neurosurgical intervention noted were open head injury (14/43), depressed skull fracture (11/43), epidural haematoma (7/43), subdural haematoma (2/43) and intraventricular haemorrhage (2/43). While the surgical operations included: debridement and duroplasty, elevation of depressed skull fracture, craniotomy and evacuation, burr hole drainage of liquefied collection and external ventricular drainage.

Conclusion: Paediatric head injury commonly affects boys in our environment and resulted from road traffic crashes in most patients. There were few cases of fall in to water wells. Various indications for surgical intervention were observed including but not limited to open head injury, depressed skull fractures and intracranial haematomas.

KEYWORDS

Clinical pattern, Head injury, Road traffic crash

INTRODUCTION

Trauma is the leading cause of death in children older than one year globally, with head trauma comprising more than 80% of the injuries.¹ Traumatic brain injury (TBI) is the commonest cause of acquired disability in children, in which a quite significant cases occur in developing countries. This is increasingly becoming worrisome in our society because of increased risks of road traffic accidents in our environment.¹⁻⁴ Studies have demonstrated that younger children are more likely to present with traumatic brain injury resulting from falls, whereas adolescents with TBIs are mostly following road traffic crashes and sports-related trauma.^{2,4} The objective of this study was to describe the clinical pattern of paediatric head injury in our settings.

METHODS

A five-year retrospective analysis of children (16 years and below) with head injury who had surgical operation in our centre between January 2013 to December 2017. Relevant data was obtained from operation register and patient's case files and analysed.

RESULTS

A total number of 43 patients were operated over the study period. Male to female ratio was 2.9:1, age ranging from 7 months to 16 years. Seventy-seven percent of the cases (n=33) were caused by road traffic accident (RTA), while 14% (n=6) were due to fall into a well.

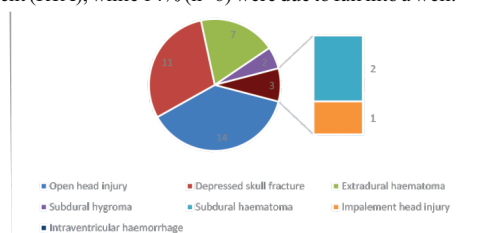


Figure 1: Computerised tomographic scan findings of the patients

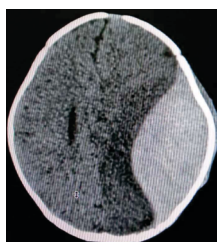


Figure 2: Axial cut computerised tomographic scan showing left

parieto-temporal epidural haematoma

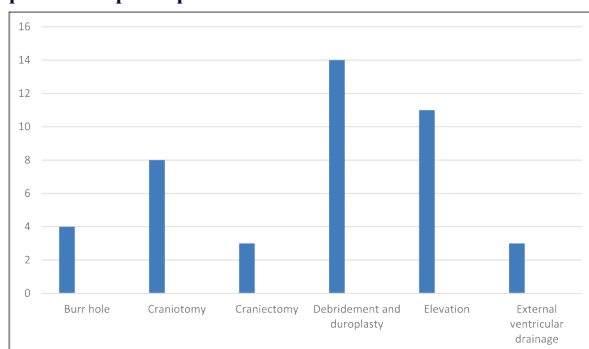


Figure 3: Distribution of surgical procedures

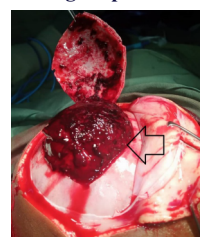


Figure 4: intra-operative photograph showing epidural haematoma (arrow)



Figure 5: Clinical photograph showing forehead wound with bone defect

DISCUSSION

Paediatric head injury commonly affects male children compared to females in our environment. This is equivalent to the findings of male predisposition reported in previous studies.^{5,6,7} The predominance of boys in head injury may not be unconnected to the high outdoor activities of males in our environment. Majority of cases of paediatric head injury seen in our centre resulted from road traffic crashes. Similar observation was made from studies conducted in and outside Nigeria.^{3,5,7} However, in contrast to the aforementioned finding, falls were found to be the most common cause of head injury in children in previous study.^{6,8,9} Children do generally have an increased risk of head injury due to thin skull bone, large head-to-body ratio and inability to protect themselves from injurious objects. In addition, children in our society and other developing countries are engaged in street hawking, man road side shops and mostly go to schools and markets on foot thereby putting them prone to road traffic crashes.⁹ Fall into a water well was a relatively common occurrence in children in our settings. This was as a result lack of pipe-borne water in most of the rural areas in our environment, poorly constructed water wells without cover or parapet. Children are usually sent to fetch water for domestic use without proper supervision by responsible adults.

Various computerised tomographic findings were observed in our patients (figure 1) but the most common requiring surgical intervention were open head injury (head injury with dural breach and external wound), depressed skull fracture and epidural haematoma (figure 2). Others include subdural haematoma, intraventricular haemorrhage. In few cases subdural hygroma with midline shift was found that needed surgery. We thought the subdural hygromas were most likely cases of chronic subdural haematoma that gets absorbed over time; because of the history of head trauma and late presentation, all the admitting symptoms resolved after drainage. Different neurosurgical procedures (figure 3) were performed in our patients depending on the indication: debridement and duroplasty for open head injury (figure 5), craniotomy and evacuation for acute intracranial haematomas (figure 4) and external ventricular drainage for intraventricular haemorrhage. Burr hole for chronic subdural haematoma and subdural hygroma, craniectomy was also done for cases of posterior fossa epidural haematoma. Lastly, cases of depressed skull fractures were elevated.

CONCLUSION

Paediatric head injury commonly affects boys in our environment and resulted from road traffic crashes in most patients. There were few cases of fall in to water wells. Various indications for surgical intervention were observed including but not limited to open head injury, depressed skull fractures and intracranial haematomas.

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