



Traumatic Unilateral Basal Ganglia Hemorrhage in a Pediatric Patient: A Case Report

Ziya Asan^{*} 

Department of Neurosurgery, Kirsehir Ahi Evran University Faculty of Medicine, Kirsehir, Turkey

Abstract

Traumatic basal ganglia hemorrhages are among the very rare intracranial hemorrhages. In cases with bleeding in this region, high mortality and morbidity rates are encountered. This region contains many anatomically critical functional pathways. Basal ganglia hemorrhages are common in the elderly, and hypertension plays a role in its pathogenesis. Age-related comorbid factors are also relatively high in these patients. Basal ganglia hemorrhages are very rare in the pediatric age group. It can be predicted that the prognosis in this age group will be better than in the elderly. A 13-year-old man was followed up with the diagnosis of unilateral basal ganglia hemorrhage after falling from a bicycle. Right hemiparesis was present at the time of admission. Neurological findings of the patient, who was followed up with conservative treatment, completely recovered after one week. In control computed tomography examination, it was observed that the hematoma was completely resorbed. Herein, we present the clinical and radiological prognosis in a child with traumatic basal ganglia hemorrhage.

Keywords: Basal ganglia hemorrhage; Pediatric head trauma; Intracranial hemorrhage; Head trauma.

*Correspondence to

Ziya Asan, MD; Department of Neurosurgery, Kirsehir Ahi Evran University Faculty of Medicine, Bagbasi, Sehit Sahir Kurutluoglu Cd. No:100, Kirsehir, 40100, Turkey. Tel: +90 386 2134515, Email: ziyaasan@gmail.com

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Introduction

Traumatic basal ganglia hemorrhages constitute a small part of intracranial hemorrhages.¹⁻³ Basal ganglia hemorrhages, which occur primarily in non-traumatic conditions because of hypertension in adults, are frequently seen in the advanced age group due to the excess of cardiovascular diseases.^{2,4,5} Basal ganglia bleeding is infrequent in the pediatric age group. Changes in consciousness and neurological deficits are very common in patients diagnosed with hematoma in this localisation. Surgical intervention is rarely used to treat these cases according to their clinical and radiological course. Posttraumatic intracranial hemorrhages are mostly classified as epidural, subdural and intracerebral hemorrhages with cortical extension. Posttraumatic basal ganglia hemorrhages are among the rare cases. In this study, we aimed to present a rare case when evaluated together with age and pathogenesis. The prognosis in the pediatric age group may be much better than in the advanced age group.

Case Report

A 13-year-old boy was evaluated in the emergency room due to falling off his bike. The patient was evaluated as a multi-trauma case, and no additional trauma findings were found except head trauma. The patient had right periorbital ecchymosis and soft tissue edema (Figure 1a).

In his neurological examination, the patient was found to be confused. Glasgow Coma Scale (GCS) was evaluated as 13/15 at admission. Motor strength in the right arm and leg was evaluated as 3/5. In cranial computed tomography (CT) examination, a 2×3 cm hematoma was detected in the left basal ganglia region (Figure 1b). Routine blood parameters were evaluated within the normal range. The patient was given analgesic treatment. In the control cranial CT examination one day later, the hematoma size was approximately 4 cm (Figure 1c). In the patient's neurological examination on the 7th day, it was observed that his neurological deficits were completely healed. In the cranial magnetic resonance imaging (MRI) examination, no pathological finding that could be associated with hematoma was detected (Figure 2a). In control cranial CT examination on the 13th day, it was seen that the hematoma was almost completely resorbed (Figure 2b).

Discussion

Basal ganglia hemorrhage is a type of intracranial hemorrhage that is very common in the advanced age group. It occurs at a very high rate as spontaneous intracranial hemorrhages. Hypertension is responsible for its pathogenesis.^{1,2,4} Posttraumatic basal ganglia hemorrhages are very rare. Traumatic rupture of the lenticulostriate artery and anterior choroidal artery

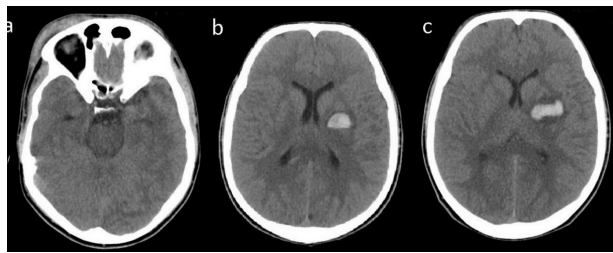


Figure 1. Periorbital soft tissue edema (a) and hematoma in the left basal ganglia region (b) at initial diagnosis. Partial increase in axial extent of bleeding on CT examination 1 day later (c)

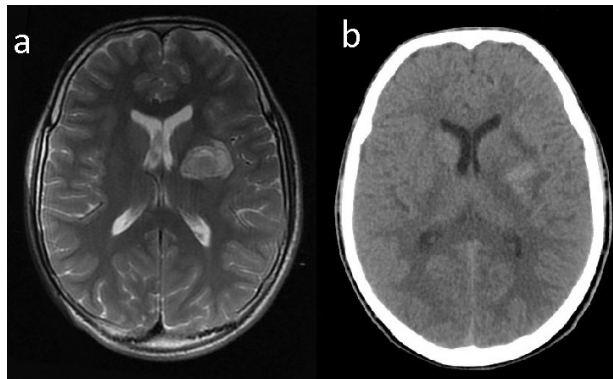


Figure 2. No pathological structure that could cause hemorrhage was observed in MRI examination (a). CT examination of the 13th day shows that the hematoma is completely resorbed (b)

occurs in these types of bleeding.^{2,4,6} The formation of isolated hematoma in this region cannot be described exactly. It is thought that the energy during the trauma is focused in this region.

When evaluated according to their size, hematomas larger than 2 cm in this region are defined as large hematomas. It is known that a high rate of mortality and morbidity is encountered in the surgical treatment of hematomas in this region. This region is a localisation that contains many structures associated with neurological functions. For this reason, conservative treatment methods are preferred as much as possible rather than surgical intervention.^{2,5,6} Since bleeding in this area is usually seen in elderly patients, high rates of comorbid factors are encountered for surgical intervention.

Since basal ganglia hemorrhages occur in the advanced age group as a result of hypertension, the presence of multiple comorbid factors should be considered for clinical prognosis. It can be predicted that posttraumatic

basal ganglia hemorrhages in the pediatric age group will have a better prognosis due to relatively fewer comorbid factors.

Basal ganglia hemorrhages are highly associated with motor deficits and unconsciousness due to their localization. High rates of mortality and morbidity are encountered in hemorrhages in this region. Conservative treatment methods are preferred whenever possible for bleeding in this region. Because surgical intervention can also have a traumatic effect and cause further damage to intact neuronal structures. In the pediatric age group, it can be predicted that the clinical prognosis in bleeding in this region may be better than in elderly cases. The absence of risk factors such as hypertension, antiaggregant-anticoagulant use, which may cause such bleeding in this age group, is the data supporting a better prognosis.

Conflict of Interest Disclosures

The author has no personal, financial, or institutional interest in any drugs, materials, or devices described in this article.

Ethical Statement

Written informed consent was obtained from patient's relatives.

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