Transient Blindness after Minor Head Injury: A Case Report

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Transient cortical blindness is a rare complication of mild head trauma in children. This manifestation always creates fear in the patient and their family. However, it usually has a benign outcome.

We report on a ten-year-old boy who was admitted for bilateral blindness after frontal head injury following a scooter vs. vehicle accident. Neurological and ophthalmological examinations were normal. The blindness resolved completely within three hours.

Such blindness has a rapid and benign outcome. Its cause is not clear, although some suggest a cerebral vasospasm or cortex edema.

Key words: head injury, transient blindness, brain cortex

Introduction

Transient blindness following head injury is often attributed to hysteria if brain computed tomography (CT) scan and fundoscopic examination are normal. However, transient loss of vision after head injury can mean brain injury has occurred, usually involving the occipital visual cortex. It is referred to as 'post-traumatic transient cortical blindness' (PTTCB)3. There are still some physicians working in emergency departments (ED) who do not fully understand this condition. We report one case of transient blindness after head injury.

Case Report

A 10-year-old boy sustained a left frontal head injury after a scooter vs. vehicle accident. He had no history of loss of consciousness but complained of dizziness and complete loss of vision. On examination, his blood pressure and pulse were within normal limits. The left frontal area of his head had abrasions and bruising. His glasgow coma scale (GCS) score was 15. Both pupils reacted normally to light but he insisted that he could not see anything. Corneal reflex was normal and he did not respond well to threatening gestures. Fundoscopy findings were normal and we did not find any abnormalities on brain CT scan. Three hours after observation in the ED, the patient regained normal vision without medication.

Discussion

Bodian first reported PTTCB in 1964; he reported six cases in children4. The term 'cortical blindness' refers to a condition mainly involving the visual cortex. The visual fibers that terminate in the midbrain are intact and therefore allow the preservation of light reflexes; ocular motility and fundoscopic examination are normal5. In 1973, Greenblatt reported that the incidence of PTTCB was about 0.4% to 0.6%5. However, since it is not uncommonly attributed to hysteria and patients may be too young or too old to complain of loss of vision, the
incidence may be higher.

The cause of PTTCB is not clear. Some believe that it is the result of vasospasm in the pregeniculate area or edema and ischemia in the occipital cortex. PTTCB is more common in children, who have a more labile vasculature than adults\(^1,4\). The majority of cases of PTTCB resolve within hours\(^3\). Loss of vision may be incomplete\(^4\), so it is possible for children with PTTCB to respond to threatening gestures, especially if the gesture is very close to the eyes. In our case, the patient seemed to have some response to threatening gestures. When we repeatedly moved a hand very quickly close to his eyes, he blinked a few times but did not withdraw his head. If he had incomplete loss of vision he would also blink. Nonetheless, quickly moving a hand close to the face will create a waft of air near the patient’s eyes that may also cause the eyes to blink, even in a case of complete blindness.

Although our 10-year-old patient did blink, he still insisted he could not see. It is difficult to distinguish blindness from hysteria or incomplete PTTCB when the patient is very young or uncooperative. To avoid the ‘wafting air effect’ on the eyes when using threatening gestures, we can try to trigger the optokinetic nystagmus (OKN) instead. A patient with hysterical blindness will have OKN. This phenomenon is elicited by passing a sheet of paper with alternating light and dark vertical stripes in front of the patient’s eyes. A lack of OKN in response to this is consistent with blindness, as OKN cannot be suppressed voluntarily\(^4\).

PTTCB requires no treatment but in-patient neurological observation is necessary. The majority of cases of PTTCB resolve within hours, although some prolonged syndromes have been described\(^3\).

**References**

輕微頭部外傷後暫時性失明：病例報告

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孩童輕微頭部外傷後發生暫時性失明的現象並不多見，我們報告一位十歲的男童機車車禍後發生雙眼失明的現象，該孩童意識完全清醒，視力在三小時後恢復正常。 眼底與電腦斷層檢查未有任何異常病兆，大多急診醫師易將此種失明歸結為心理因素，其實很多是屬於外傷後皮質因缺血而發生暫時失明的現象，此種失明多見於孩童，且大多在幾小時內自癒。

關鍵詞：頭部外傷，暫時性失明，大腦皮質