Traumatic Oculomotor Nerve Avulsion after Mild Head Injury

Avulsão traumática do nervo oculomotor após traumatismo craniano leve

Leonardo Welling1  Mariana Welling2  Eduardo Antunes1  Ariana Jumes1  Roberto Umeda3
Eberval Gadelha Figueiredo4

1 Department of Neurosurgery, Universidade Estadual de Ponta Grossa, Ponta Grossa – PR, Brazil
2 Department of Neurology, Universidade Estadual de Ponta Grossa, Ponta Grossa – PR, Brazil
3 Clinica da Imagem, Ponta Grossa, Brazil
4 Department of Neurosurgery, Universidade de São Paulo (USP), São Paulo, Brazil

Address for correspondence Leonardo Welling, Universidade Estadual de Ponta Grossa, Ponta Grossa, R. Cel. Bitencourt, 689 - Centro, Cep. 84010-290 PR, Brazil (e-mail: leonardowell@yahoo.com.br).

Abstract

The authors describe a 37-year-old female who suffered a mild head injury after a car accident. She was found with an initial Glasgow coma scale score of 15. On further inspection, complete right ophthalmoplegia was observed. Initial computerized tomography (CT) scan of the head was normal, but magnetic resonance imaging showed right oculomotor nerve avulsion. The patient was discharged from the hospital without any improvement in complete ophthalmoplegia. To our knowledge, this is the first radiographically documented case of oculomotor nerve root avulsion with associated irreversible oculomotor nerve palsy after mild head injury. Considering the poor prognosis for recovery of the nerve function, an appropriate counseling should be provided to the patient and family. Neurosurgical techniques for attempting nerve reconstruction have yet to be investigated but could be a new area for clinical and surgical research.

Keywords
► oculomotor nerve
► head injury
► avulsion

Palavras-chave
► nervo oculomotor
► traumatismo craniano
► avulsão

Introduction

The incidence of primary traumatic oculomotor palsy in craniocerebral trauma is very rare (around 1%), and even rarer in the setting of mild head trauma. It is more commonly observed following severe trauma, and it is associated with loss of consciousness and permanent neurologic deficit.

Case Report

A 37-year-old female, who suffered a mild head injury after a car accident, was found with initial Glasgow coma scale score of 15. On further inspection, she had no abrasions of the forehead, no scalp hematoma and no ptosis, but exhibited a fixed, dilated right pupil (Fig. 1a, 1b). An initial computerized tomography (CT) scan of the head was normal. Magnetic resonance imaging performed after 2 days showed right oculomotor nerve avulsion (Fig. 2). Magnetic resonance imaging angiogram was normal. The patient was discharged from our hospital 3 days after the injury, without any improvement in complete ophthalmoplegia.

Discussion

To our knowledge, this is the first radiographically documented case of oculomotor nerve root avulsion with associated irreversible oculomotor nerve palsy after mild head injury. After this radiographic diagnosis, a poor prognosis for nerve function is expected. In this context, appropriate counseling should be provided to the patient and family, allowing them to understand the structural damage, and the unlikely nature of spontaneous improvement of clinical symptoms. Neurosurgical techniques for attempting nerve reconstruction have yet to be investigated but could be a new area for clinical and surgical research.

References