

DISCUSSION

Cavernoma is a benign tumor and it is considered a dysplasia of the vessels-forming mesoderm⁴. Cavernous hemangiomas in the vertebral, extradural, intradural extramedullary and intramedullary spaces are responsible for 3 to 16% of spinal vascular anomalies^{4,5}.

Extradural cavernous hemangioma represent 4% of all spinal epidural lesions⁵. Modern diagnostic imaging techniques are increasing the number of diagnosis and its frequency may be more than previously reported in the medical literature⁵.

There are four clinical syndromes described: slow and progressive spinal cord syndrome, which is the most common form; acute spinal cord syndrome; back pain; and radiculopathy³.

Imaging diagnostic exams such as spine X-rays, myelography, CT and MRI are important for evaluating the relationship of the lesion with the surrounding anatomic structures¹. Currently, MRI is the modality of choice⁵.

The treatment for these lesions is total removal of the tumor with microsurgical technique¹.

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HEMANGIOMA CAVERNOSO EXTRADURAL DA COLUNA TORÁCICA

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Bilateral traumatic avulsion of abducens nerve

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A 45-year-old previously healthy woman suffered a head trauma with neck hyperextension during bike exercise, losing consciousness for about 24 hours. Upon awakening, she presented bilateral lateral gaze palsy and convergent strabismus (Fig 1). No bone fracture was detected on CT studies (not shown). This clinical picture persisted unchanged for over one year and a MRI study done at our service showed bilateral avulsion of the sixth cranial nerve using FIESTA sequence (Fig 2A, B, C and D).

The abducens innervates the lateral rectus muscle, which is responsible for the horizontal lateral movement of the ocular globe. It has a long course, beginning at its nucleus, on the ventral pons, going through the pre-pontine cistern to its dural entry point on the petroclival region, coursing through Dorello's canal, beneath petrosphenoidal ligament, where it is covered by an envelope composed of one dural layer and one arachnoidal layer¹ to the cavernous sinus, lateral to the internal carotid artery, reaching the superior orbital fissure

and orbital apex. This long course makes it more susceptible to injuries.

Various different diseases can cause sixth nerve palsy, neoplastic and traumatic etiologies being more common in children, while vascular and idiopathic are responsible for the majority of cases in adult population².

Traumatic injuries of abducens nerve are a well-known consequence of severe head trauma, reported in



Fig 1. Convergent strabismus evidenced at physical examination 1-year after head trauma.

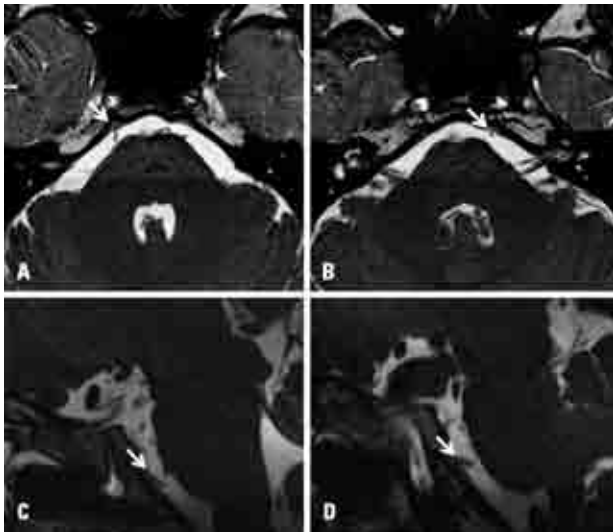


Fig 2. MRI study 1-year after trauma showing discontinuity on the cisternal segment of the VI nerve (complete avulsion) on the right [A and C] and on the left [B and D]. Oblique axial [A and B] and oblique sagittal [C and D] FIESTA reformatted images.

1-2,7% of the cases, with or without associated cervical or skull base fracture³. Usually, the mechanism of injury is contusion/stretching along its course and vertical displacement (downward and/or upward) of the brain is supposed to be the cause of these lesions⁴. Two points along the nerve course are described as the most prone to injury³⁻⁵: the dural entry point (during upward displacement) and the petrous apex (during downward displacement). Since these two movements are usually associated on severe head trauma, these two points likely work together to cause the lesion.

In our case, with a MRI study acquired on 1.5 tesla equipment (GE Medical systems - Milwaukee), using FIESTA sequence post processed in dedicated workstation, we observed bilateral sixth nerve discontinuity

along its pre-pontine course, detached from the pons, at the pontomedullary sulcus level. The other cranial nerves had preserved morphology. There were no signs of bone fracture, brainstem or orbital muscle lesions.

FIESTA (different names are used for similar technique by other manufacturers, like BALANCED FFE and 3D-CISS, for example) is a magnetic resonance sequence heavily T2-weighted, capable of acquiring very thin slices, allowing reformation in all three planes, optimal for analyzing morphologic features of structures next to CSF containing spaces, like basal cisterns.

In the presented case, one year after trauma, there was still unchanged ophthalmoplegia and a MRI study showed bilateral complete abducens nerve avulsion. As far as we know, no previous report has showed, with imaging studies, this consequence of head trauma.

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AVULSÃO TRAUMÁTICA BILATERAL DO NERVO ABDUCENTE

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