

## Post-Traumatic Diplopia

Federico Greco<sup>1</sup>, Carlo Augusto Mallio<sup>1</sup>, Lorenzo Sabatino<sup>2</sup>, Yuri Errante<sup>1</sup>, Manuele Casale<sup>2</sup>, Carlo Cosimo Quattrocchi<sup>1</sup>, Bruno Beomonte Zobel<sup>1</sup>

From 1 Unit of Diagnostic Imaging and 2 Unit of Otolaryngology, Campus Bio-Medico University of Rome, Via Alvaro del Portillo, Rome, Italy

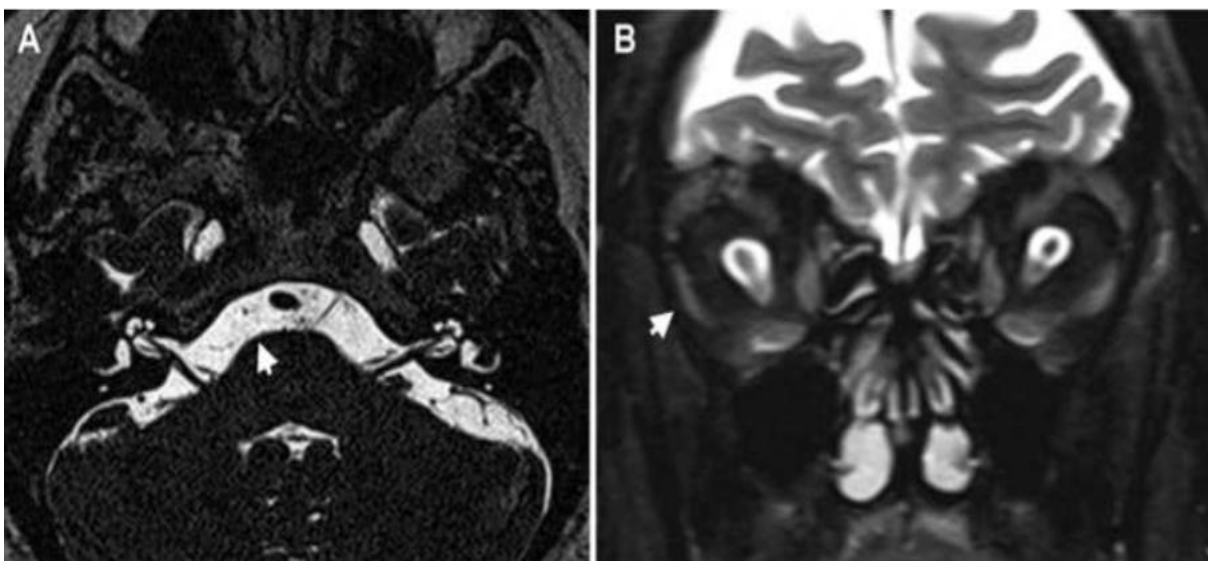
**Correspondence to:** Greco Federico, Unit of Diagnostic Imaging, Campus Bio-Medico University of Rome, Via Alvaro del Portillo - 21, 00128, Rome, Italy. Email - [federico.greco@unicampus.it](mailto:federico.greco@unicampus.it).

Received: 04 August 2016 Initial Review: 25 August 2016 Accepted: 04 September 2016 Published Online: 13 September 2016

A 52-year-old woman was admitted to our radiology department to perform a brain magnetic resonance imaging (MRI) examination. One month before, she had been involved in a multi-vehicle accident with amyelic C2-C3 anterior spondilolisthesis associated to bilateral pedicle fracture of C2, treated conservatively with halo jacket. Multiple left-side ribs fractures with associated ipsilateral pneumothorax, left radius and left ulnar fractures were also diagnosed and

treated. Brain computed tomography scan, performed in the emergency department, showed no abnormalities.

On examination, binocular horizontal diplopia greater in right gaze, suggestive for right lateral rectus muscle palsy, was observed. No other neurological motor, sensory or sphincterial deficits were present. Brain MRI showed absence of right VI cranial nerve (Figure 1, panel A). No brain supra- or infra-tentorial abnormalities were present.



**Fig1:** Axial TSE 3D SPACE sequence (panel A) and coronal T2 fat suppressed TSE sequence (panel B). In the pre-pontine cistern, the absence of the cisternal tract of the right abducens nerve is shown (Panel A, arrow), conversely, the left abducens nerve is normal. Asymmetry of eye muscles with reduction in thickness of the right lateral rectus muscle (Panel B, arrow).

Four months later, patient underwent an orbits MRI study that showed hypotrophy of the lateral rectus muscle of the right side (Figure1, panel B). Diagnosis of post-traumatic avulsion of the right VI cranial nerve with denervation of the right lateral rectus muscle was made.

Avulsion of the cranial nerves must be suspected in post-traumatic patients, especially when the axial impact is associated with lateral bending and with fractures of the skull base and upper cervical spine. Although computed tomography scan, routinely performed in trauma centers, enables to assess the skull base foramina integrity, MRI is the technique of choice to visualize in detail the cranial nerves [1].

## REFERENCES

1. Casselman J, Mermuys K, Delanote J, Ghekiere J, Coenegrachts K. MRI of the cranial nerves more than meets the eye: technical considerations and advanced anatomy. *Neuroimaging Clin N Am.* 2008; 18: 197-231.

**How to cite this article:** Greco F, Mallio CA, Sabatino L, Errante Y, Casale M, Quattrocchi CC, Beomonte Zobel B. Post-Traumatic Diplopia. *Indian J Case Reports.* 2016; 2(4): 125-126.

*Conflict of interest: None stated, Funding: Nil*