Differentiation of traumatic optic neuropathy

Neuropatia óptica traumática: como diferenciar

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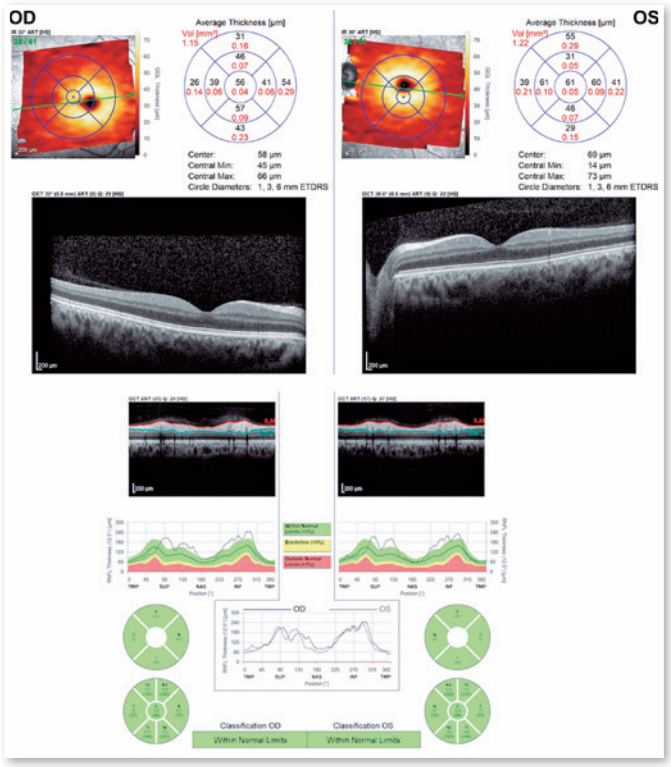

Figure 1. Macular ganglion cell and retinal nerve fiber layers thicknesses of right and left eyes, right after trauma.

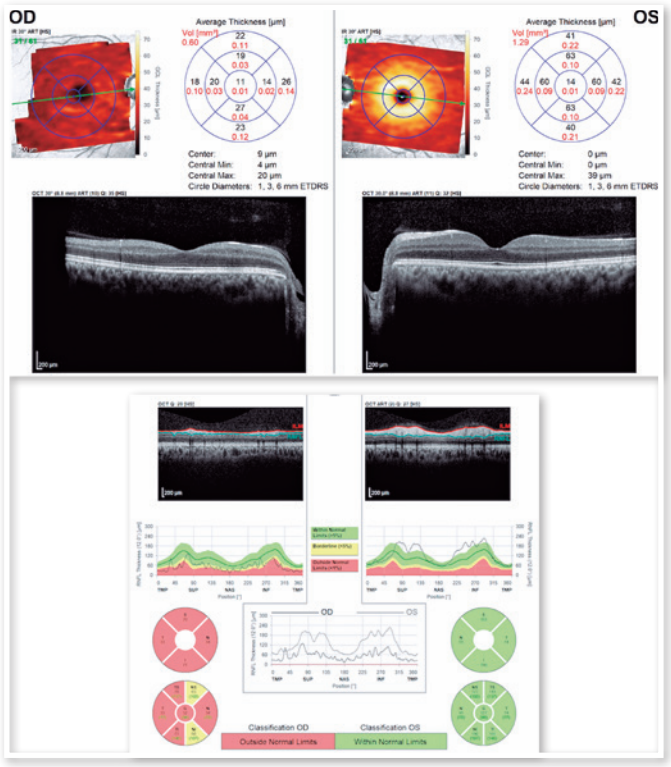

Figure 2. Macular ganglion cell and retinal nerve fiber layers thicknesses of right and left eyes, 3 months after trauma.

A 27-year-old man presented to the ophthalmology clinic complaining of vision loss in the right eye after an accidental fall from his height. His visual acuity was "no light perception" in the right eye and 20/20 in the left eye. Ocular motility, biomicroscopy, and fundoscopy findings were unremarkable, and there was an afferent pupillary defect in the right eye. Optical coherence tomography was performed immediately after traumatic optic neuropathy (Figure 1) and after 3 months (Figure 2). The retinal nerve fiber (RNF) and ganglion cell (GC) layers were initially normal, despite the extreme visual acuity loss in the right eye. At the time, the most reliable information about optic nerve integrity was obtained from the pupillary light

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reflex. Three months later, there was a severe decrease in the thicknesses of both the RNF and GC layers.

The optic nerves are vulnerable to direct and indirect trauma. Direct injury can be caused by penetrating trauma, such as that associated with orbital fractures or foreign bodies. Indirect injury, which is the most common injury type, occurs due to the forces generated by head trauma and transmitted to the optic nerve via the orbital apex and optic canal. In such a case, the head trauma can be light (to the malar or frontal areas) or severe and can occur along with traumatic brain injury[1].

The clinical findings include reduced visual acuity, visual field defects, color vision loss and afferent pupillary defects. Usually, in indirect optic neuropathy, the optic nerve appears normal on fundoscopy during the initial weeks after a trauma but becomes atrophic subsequently[2].

Despite attempts to use steroids and perform surgery, the treatment for traumatic optic neuropathy remains controversial because of the lack of evidence-based guidelines[3].

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