A new insight in Terson Syndrome

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Purpose
Terson syndrome has recently been defined as an intraocular hemorrhage caused by an abrupt increase in intracranial pressure, although the exact pathogenesis has not been clarified yet. The hemorrhage is most frequently placed beneath the internal limiting membrane and/or in the vitreous body. The aim of the study is to establish the anatomic localization of the hemorrhage and the involvement of retinal layers in patients affected by this syndrome.

Materials and Methods
In this retrospective study 16 patients (19 eyes) with Terson syndrome were examined (10 were male, age ranging between 24 and 66 years). In most cases (8 out of 16) the right eye was involved, while 3 patients showed a bilateral involvement. Vitreous hemorrhage was observed in 18 eyes, while retinal hemorrhage was found just in one eye. Ultrasounds were also useful to ensure the integrity of the posterior pole and to exclude any potential retinal detachment through an opaque vitreous body. All the 18 eyes with vitreous hemorrhage underwent pars plana vitrectomy (by the same surgeon: M.AM) using 25 gauge caliber instruments in 15 cases and 23 gauge caliber instruments on the remaining 3 eyes.

Results
During surgery, after blood in the vitreous had been removed, a dome-shaped macular hemorrhage was found. All the patients were recalled and underwent an Optical Coherence Tomography examination which was carried out using a Topcon DRI Triton swept-source OCT device. In all the eyes in which a membrane had been peeled, SS-OCT images showed the appearance of DONFL on the retinal surface. Furthermore, in one eye a notch could be noticed at the side of the fovea, corresponding to the point where the tissue overlying the hemorrhage had been pinched. These features were consistent with the removal of the internal limiting membrane.

Conclusion
The enface OCT appearance of DONFL reinforces the hypothesis that the blood would initially locate under the internal limiting membrane and then pour into the vitreous (vitreous hemorrhage). Although rare, sub-hyaloid and retinal hemorrhages have also been reported in Terson syndrome and a simultaneous involvement of different compartments have been described as well. Topcon DRI Triton swept-source OCT Swept Source, utilized in the present study, could be useful in clarifying these new insight in Terson Syndrome

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