

CASE REPORT

Preretinal hemorrhage

Hemorragia pré-retiniana

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ABSTRACT

A case of Valsalva hemorrhagic retinopathy treated with Nd:YAG laser is described. The patient presented decreased visual acuity after coughing, and a preretinal hemorrhage was diagnosed in the posterior pole; puncturing the posterior hyaloid face was performed with Nd:Yag laser. Rapid hemorrhage absorption was observed after the therapy proposed and visual acuity was recovered. Nd:Yag laser proved to be safe and efficient in the management of preretinal hemorrhage.

Keywords: Valsalva maneuver; Lasers/therapeutic use; Visual acuity; Eye hemorrhage

RESUMO

Descreve-se um caso de hemorragia pré-retiniana por Valsalva tratado com Nd:YAG laser. Paciente apresentou baixa da acuidade visual após crise de tosse, sendo diagnosticada hemorragia pré-retiniana no pólo posterior; foi realizado perfuroto na hialóide posterior com Nd:Yag laser. Após tratamento proposto, observou-se rápida absorção da hemorragia com o restabelecimento da acuidade visual. Nd:Yag laser mostrou-se seguro e eficaz no manejo da hemorragia pré-retiniana.

Descritores: Manobra de Valsalva; Lasers/uso terapêutico; Acuidade visual; Hemorragia ocular

INTRODUCTION

Preretinal hemorrhage may occur after rupture of retinal vessels and is associated with physical exercises and increased venous pressure (Valsalva retinopathy) or retinal vascular alterations, such as macroaneurismas and proliferative diabetic retinopathy⁽¹⁾.

Valsalva retinopathy is characterized by a sudden decrease in visual acuity. It may be treated by vitrectomy, Nd:YAG laser membranotomy or observation. We described a case of

preretinal hemorrhage, its treatment with Nd:YAG laser and a favorable progression within a short period of time.

CASE REPORT

Patient I.M.M.L, a white, 40-year old housewife sought an ophthalmologic service due to decreased visual acuity for one day and history of dyspnea associated with coughing and vomiting.

Her blood pressure was borderline and she was on behavioral and dietetic treatment. She smoked approximately 20 cigarettes/day. Her parents were hypertensive and she denied any past ophthalmologic history. On ophthalmologic examination, she presented visual acuity with no correction of finger counting at 15 centimeters in the right eye (OD) and 20/20 in the left eye (OL).

On biomicroscopic examination, a slight conjunctival hyperemia was observed in OD and there were no alterations in OL. The intraocular pressure (IOP) was 10 mm Hg in OD and 12 mm Hg in OL, at 4 o'clock. In OD retinal mapping, it was difficult to assess papillary excavation due to hemorrhage in the papillary edge from 7 to 1 o'clock. Nevertheless, the visualized area presented clear edges, preserved neuroretinal rim with normal color, attached retina with normal color, slightly increased vascular tortuosity and presence of preretinal hemorrhage of 10 papillary diameters (PD).

On OL examination, vertically oval papilla with clear edges, preserved ISNT rule, neuroretinal rim with normal color and 0.5 vertical/0.4 horizontal excavation, attached retina with normal color and macula with preserved foveal reflex. Posterior hyaloid photodisruption was performed with Nd:YAG laser (21 pulses with 6 mJ-energy, total energy of 142 mJ). In the first week after Nd:YAG laser, the patient already

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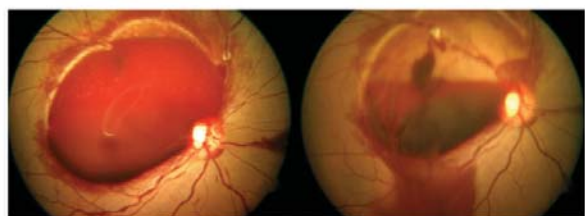
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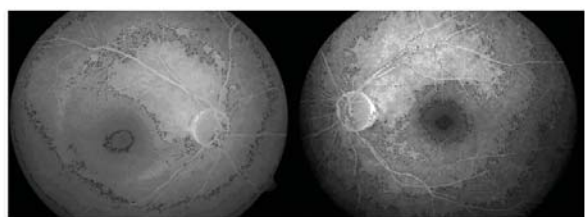
presented visual acuity of 20/20 in both eyes; however, cellularity in the anterior chamber and turbid vitreous ++/4+ persisted for 15 days and clinical treatment with VUEFFE® 3 times/day for 30 days was initiated. After this period, the patient was asymptomatic and was submitted to a fluorescein angiography that demonstrated a hyperfluorescent area uniformly comprising the macular region in all phases of the exam. Figure 1a and figure 1b shows the comparison between the two eyes by retinography.



Right eye pre treatment
with YAG - laser

Right eye pos treatment
with YAG - laser

Figure 1a



Right eye

Left eye

Figure 1b

DISCUSSION

Macular preretinal hemorrhage generally causes severe visual loss. The most common etiologies are proliferative diabetic retinopathy, macroaneurisma, Valsalva retinopathy and blood dyscrasias⁽²⁾.

The frequency of Valsalva retinopathy has not been estimated due to the reduced number of reported cases. A sudden increase in intra-abdominal or intrathoracic pressure against a closed glottis (Valsalva maneuver) may cause fast rise in venous pressure, leading to spontaneous rupture of superficial retinal capillaries⁽¹⁾.

According to the literature, the visual acuity of this patient was within the limits⁽³⁻⁸⁾, as well as hemorrhage size^(3,6). The most common site for hemorrhage in Valsalva retinopathy is the posterior pole because of a preexisting anatomical space - premacular bursa. Since it is difficult to indicate the accurate site of hemorrhage - between retina and internal limiting membrane, or internal limiting membrane and hyaloid, we decided to use the term preretinal hemorrhage.

The presence of a light reflex and the fluid level on funduscopy may indicate the involvement of the internal limiting membrane^(1,6). Other therapeutical options are

observation, Nd:YAG laser photodisruption and vitrectomy. Although hemorrhage resulting from Valsalva retinopathy has spontaneous resolution, it presents some inconveniences, such as long waiting period for visual recovery and some complications, such as epiretinal membrane. In vitrectomy, a more invasive procedure, the complication rate in both peri- and postoperative periods is higher and potentially more severe. Faulborn was the first author to describe photodisruption in the treatment of premacular hemorrhage⁽⁹⁾.

Puncturing the posterior hyaloid of the internal limiting membrane in the hemorrhagic site is a feasible alternative to vitrectomy in the management of extensive premacular hemorrhage⁽³⁻⁸⁾. Laser membranotomy enables erythrocytes accumulated in the macula to leak to vitreous, where they are more rapidly absorbed⁽³⁻⁸⁾.

Most studies describing the treatment of premacular hemorrhage with photodisruption aimed to open a single passage, the most distant possible from the fovea and trying to not achieve areas in which there would be clotted blood. The energy used ranges from 3 to 8 mJ and the number of pulses may increase up to 54⁽³⁻⁸⁾. In the case mentioned above, we chose treating with Nd:YAG laser photodisruption since hemorrhage had more than three papillary diameters, a thick blood column protecting the retina. We were cautious to use the lesser possible effective amount of energy^(5,10).

CONCLUSION

Nd:Yag laser proved to be an efficient and safe technique for treating preretinal hemorrhages considering the safety criteria.

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