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Review Article

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RETROHYALOIDAL HEMORRHAGE REVEALING AORTIC INSUFFICIENCY IN A YOUNG PATIENT

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ABSTRACT

Pre-retinal macular hemorrhage can complicate several retinal pathologies, including Valsalva retinopathy. Located between the internal limiting membrane and the retinal optic fiber layer, the hematoma is a factor in retinal toxicity with macular sequelae. It requires emergency treatment based on YAG laser hyaloidotomy, with excellent results. We report the case of a 47-year-old man who consulted us for a sudden decrease in visual acuity in his right eye, with temporal hemianopia. The history-taking did not reveal any history of trauma. A complete ophthalmological examination of the left eye was normal, with visual acuity of 10/10. In the right eye, visual acuity was 1/100, with an examination of anterior segment without any particularities, but the fundus revealed a macular preretinal hemorrhage of 2 papillary diameters, with a flat retina and normal excavation. A biologic workup was ordered, revealing no abnormalities. However, a cardiological examination diagnosed severe aortic insufficiency with left ventricle repercussions and associated pulmonary arterial hypertension at 55mmHg on TTE. Ultrasound examination of the supra-aortic trunks revealed moderate atheromatous overload, predominantly on the right, with no significant stenosis. The patient was put on medical treatment, and the indication of aortic valve replacement was retained. After all this work-up, the diagnosis of Valsalva retinopathy was the most likely, given the patient's young age and the abrupt onset of reduced visual acuity. The patient underwent YAG laser treatment, with a favorable outcome and restoration of visual acuity to 10/10. Valsalva retinopathy should be suspected in the presence of retrohyaloid hemorrhage, especially in young patients. However, hematological research and optimal correction of cardiovascular risk factors are essential to reduce the morbidity and mortality of an underlying pathology. The Argon laser is an effective therapeutic means enabling rapid restoration of visual function without retinal complications.

INTRODUCTION

Macular hemorrhages can complicate several retinal pathologies including severe proliferative diabetic retinopathy, macular macro-aneurysms or more rarely hemopathies, venous retinal macro-aneurysms, venous branch occlusions, or Valsalva retinopathy. In their preretinal form, hemorrhages are localized in the space between the posterior hyaloid and the internal limiting membrane. More rarely, they are located between the internal limiting membrane and the retinal nerve fiber layer. This location is characteristic of Valsalva retinopathy, which occurs during an increase in thoracic pressure with the glottis closed. Diagnostic and therapeutic difficulties lie in the fact that the vessels are masked by the hemorrhage, making the original site of bleeding inaccessible even on angiography. Often regressing without sequelae, they should nevertheless prompt a search for an etiology whose prognosis without treatment may be more serious.

OBSERVATION

A 47-year-old patient in good general condition, with no notable pathological history, consulted us for a sudden decrease in visual acuity in the right eye with temporal hemianopia. The history-taking did not reveal any history of trauma. Orbito-facial examination showed no abnormalities, and palpebral statics and dynamics were normal. Visual acuity was 1/100 in the right eye and 10/10 in the left. On biomicroscopy, the adnexa were strictly normal, as were the anterior segments, and ocular tone was 11 and 12 mmHg. After pupillary dilation, the vitreous was transparent and the left fundus strictly normal. The right fundus showed a macular pre-retinal hemorrhage of 2 papillary diameter, with a flat retina and normal excavation. Biological and radiological workup showed macular and perimacular preretinal hemorrhage. Biological work-up consisted of a CBC and haemostasis test, both without abnormalities.

Cardiological examination revealed the diagnosis of a severe aortic insufficiency. A specialist cardiological

opinion was sought urgently; blood pressure was 130/40 mmHg with a murmur of aortic insufficiency without signs of heart failure. The ECG showed left ventricular hypertrophy with secondary repolarization disorders. TTE showed severe aortic insufficiency with left ventricular involvement and associated pulmonary arterial hypertension at 55 mmHg. Ultrasonography of the supra-aortic trunks revealed moderate atheromatous overload, predominantly on the right, with no significant stenosis. The patient was put on medical treatment, and the indication for aortic valve replacement was retained.

The clinical and paraclinical analysis led to the diagnosis of valsalva retinopathy. The indication for YAG laser hyaloidotomy at a distance from the fovea was accepted and carried out. Progression at one-week post-laser was marked by resorption of the retrohyaloid hemorrhage and improvement of visual acuity to 6/10 one week later, and 10/10 after three weeks.

Figure 1: Retrohyaloidian hemorragy of the right eye.

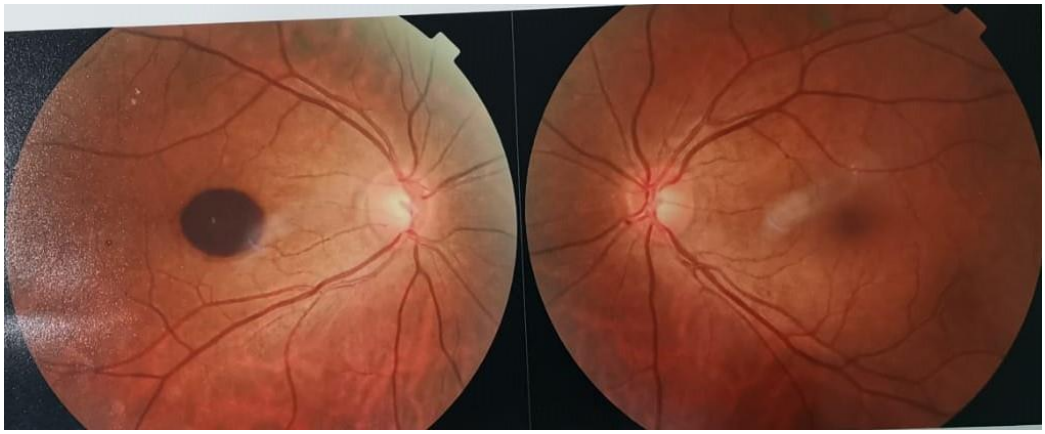

Figure 2: Evolution at d3, beginning of spontaneous resorption.

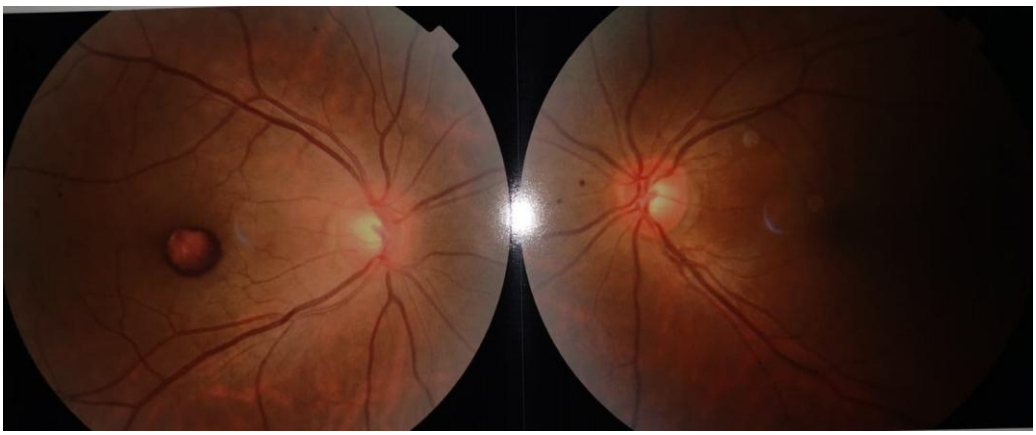

Figure 3: Evolution after one week.

DISCUSSION

In the case of preretinal macular hemorrhage, traumatic origin having been ruled out on questioning, other ocular conditions remain to be discussed. These include hemorrhage complicating isolated posterior vitreous detachment, spontaneous Terson's syndrome, benign retinal vasculitis, idiopathic retinal telangiectasia and Valsalva retinopathy. The patient's age and the sudden onset of visual impairment led to the diagnosis of Valsalva retinopathy, but the absence of physical exertion, the incidental finding of aortic insufficiency and the absence of vascular abnormalities on angiography left us limited in making this diagnosis. We therefore adopted the diagnosis of idiopathic retro hyaloid hemorrhage.

Spontaneous functional prognosis remains favorable in the vast majority of cases. However, in the presence of a retinal hematoma, management must be rapid because of its toxicity for retinal cells, linked to hemoglobin, ferrous ions and the hematoma's barrier effect against the diffusion of metabolites from the choriocapillaris to the pigment epithelium. Retinal cell tearing due to fibrin retraction can lead to a permanent loss of visual acuity if the foveolar area is involved. By the 24th hour, retinal toxicity is already present, becoming major after the 7th day. It is therefore necessary to monitor these patients closely and, if necessary, decide on a suitable treatment to accelerate emptying of the hematoma, an approach we applied in the case of our patient. In the literature, several therapeutic options have been proposed depending on the site of the hemorrhage, dominated by YAG laser hyaloidotomy.

In the study by McCabe et al. concerning a series of 41 patients, spontaneous resorption with good functional results was noted in 1/3 of cases. A final visual acuity greater than 0.5 was observed in 37% of their cases. On the other hand, 56% of their patients had macular pigmentary abnormalities after resorption of the hemorrhage, responsible for poor functional results. In the series by I. Zghal-Mokni et al. series, only two of their patients progressed favorably without treatment after 3 and 4 months. In our case, we wanted to avoid this type of outcome, especially as our patient is young and visual acuity had collapsed.

YAG laser hyaloidotomy, described in 1980, is indicated for retrohyaloid premacular hemorrhage, as in our case. It avoids the need for surgery and enables rapid restoration of visual acuity by opening the posterior hyaloid, thus accelerating the evacuation of blood into the vitreous cavity. In our observation, we noted a very rapid recovery of our patient's visual acuity in the first week post-Laser. This rapid restoration of visual acuity in our case, and in other series, would appear to be related to the short delay in carrying out the laser treatment, which is the essential factor in good or poor results. A longer delay would result in blood pooling in the cavity, making evacuation more difficult. A delay of less than a month is recommended. Ulbig et al reported that hemorrhage had to be greater than 3 papillary diameter (PD) to promote good laser beam focus.

CONCLUSION

Valsalva retinopathy should be suspected in the presence of retrohyaloid hemorrhage, especially in young patients. However, hematological research and optimal correction of cardiovascular risk factors are essential to reduce the morbidity and mortality of an underlying pathology. Argon laser therapy is an effective means of rapidly restoring visual function without retinal complications.

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