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When a Road Traffic Accident Reveals an Intravitreal Cyst: A Case Report

Charaf Bouabbadi[1*], Youssef Achegri[1], Ayoub Bouimtarhan[1], Samah Sadiki[1], Adil Elkhouyaali[1], Aissam Fiqhi[1], Yassine Mouzari[1]

[1]Department of Ophthalmology, Mohammed V Military Training Hospital, Mohammed V University of Rabat, Morocco

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***Corresponding author:** Charaf Bouabbadi
Department of Ophthalmology, Mohammed V Military Training Hospital, Mohammed V University of Rabat, Morocco

Abstract **Case Report**

Vitreous cysts, whether congenital or acquired, are rare ocular malformations. We report the case of a 70- year-old patient who sustained multiple traumas following a severe road traffic accident. Brain magnetic resonance imaging revealed an intravitreal cyst associated with intravitreal hemorrhage and a subluxated left lens. The remaining findings were unremarkable. Two months later, a combined procedure involving phacoemulsification, vitrectomy, and implantation of a posterior iris-claw intraocular lens was performed. Histopathological analysis of the cyst identified a ciliary epithelial cyst with no evidence of malignancy. Postoperatively, the patient's visual acuity improved significantly, from hand motion to 10/10. Pigmented or non-pigmented vitreous cysts are exceptionally rare and originate from the pars ciliaris or the hyaloid system. They are often asymptomatic and incidentally discovered, requiring no specific treatment. Management of vitreous cysts should be undertaken with caution and tailored to the clinical indications.

Keywords: Vitreous cysts, road traffic accident, Congenital cysts, Acquired cysts, combined phacoemulsification with vitrectomy.

INTRODUCTION

Vitreous cysts, congenital or acquired, are rare ocular malformations. Congenital cysts generally remain unchanged for a long period of time [1]. They are not associated with concomitant or previous ocular pathology. Acquired cysts, originating in the pigment epithelium of the iris or ciliary body [2], may be due to ocular trauma, inflammatory diseases such as toxoplasmosis [3], intermediate uveitis [4], or associated with degenerative diseases such as severe myopia with uveal coloboma [5] and retinal detachment [6]. Vitreous cysts are usually discovered incidentally during a routine ophthalmological examination, or in the event of visual disturbances caused by their migration towards the visual axis [7, 8]. Clinical case reports of vitreous cysts have been rare in recent years [9, 10].

We report here on a case of vitreous cyst, associated with intravitreal hemorrhage and a subluxated lens, in a patient involved in a road accident.

CASE PRESENTATION

A 70-year-old man with polytrauma, was the victim of a serious road accident. The patient was transported by ambulance to the emergency department of the Mohammed V military training hospital in Rabat. Examination upon admission to the emergency room: hemodynamically stable patient, head trauma with loss of consciousness, periorbital ecchymosis with subconjunctival hemorrhage of the left eye, multiple skin lesions and an open fracture of the left leg. On brain magnetic resonance imaging (Fig 1), an intravitreal cyst with intravitreal hemorrhage and a left subluxated lens were identified, the rest was unremarkable.

The patient was rushed to the operating room, where the orthopedist performed a reduction and external fixation of the left leg fracture.

After stabilization, the ophthalmological examination revealed an visual acuity at hand motion in the left eye and 10/10 in the right eye. Anterior segment examination: a quiet anterior chamber with an subluxated lens in the left eye, with normal examination of the right eye. Posterior segment examination: not

feasible in the left eye with normal examination in the right, so a B-ultrasound was performed, showing an intravitreal cyst with intravitreal hemorrhage and an intact retina without detachment in the left eye. After 02 months, a combined phacoemulsification, vitrectomy with posterior iris claw intraocular lens implantation was performed. Histopathological examination of the cyst revealed a ciliary epithelial cyst with no evidence of malignancy. Post-operatively, visual acuity improved significantly from hand motion to 10/10.

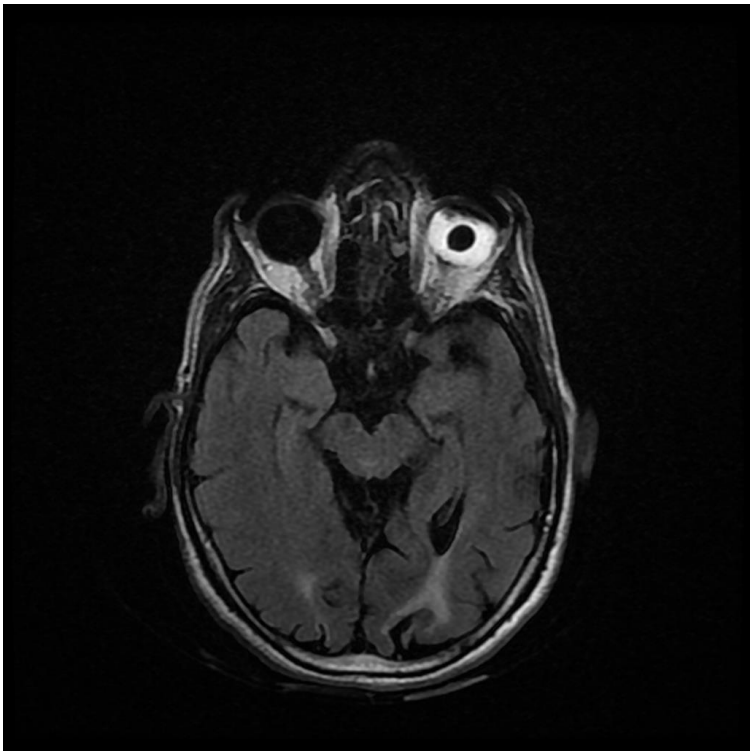

Fig 1: Axial magnetic resonance imaging (MRI) showing an intravitreal cyst of the left eye with vitreous hemorrhage and subluxated lens

DISCUSSION

Vitreous cysts were first described in 1899 [11], and only rare cases have been reported in the literature. Patients were mainly aged 5 to 68 years and no gender differences were observed in these reports [12]. Vitreous cysts are usually spherical or oval, and range in size from 0.15 to 12 mm [13], such as our patient whose cyst is oval with a long axis of 11.3 mm. Non-pigmented cysts are yellowish, while pigmented cysts are covered with pigment. They are usually asymptomatic and detected due to other ocular symptoms. However, when it affect the visual axis, it can cause visual symptoms such as blurred vision or floaters [14].

Non-pigmented cysts are often located at the Cloquet canal, sometimes associated with posterior Mittendorf capsular opacity [15]. Acquired vitreous cysts have been found: from a degenerated ciliary adenoma or a large cystic coloboma [16]; following trauma or surgery of the posterior segment [17]; in the context of ocular inflammation such as toxoplasmosis or parasitosis (cysticercosis, echinococcosis) [18, 19]; retinitis pigmentosa [20], chorioretinal atrophy or Wagner's disease [21]. Pigmented cysts originate from the iris pigmented epithelium, a hypothesis that was confirmed by an electron microscopy study [22]. Our patient's cyst was a ciliary epithelial cyst with no signs of malignancy according to histopathological examination.

A few familial cases of pigmented cysts are described in the literature, with an autosomal dominant transmission [23, 24].

Slit-lamp examination can be used to describe the characteristics and mobility of the cyst [7]. Associated lesions on the fundus can provide an idea of the origin of the cyst [25], which was impossible in our case, due to the presence of intravitreal haemorrhage and a subluxated lens. B-ultrasound is also important for the diagnosis and description of vitreous cysts, which are usually round or quasi-round, with moderate echo, thin wall, smooth echo wall, an anechoic dark area inside the cyst, and a positive posterior movement [26]. These sonographic features are distinguished from the dense circular echoes seen in the central portion of cysticercosis lesions in the vitreous cavity [27].

Treatment of vitreous cysts depends on the symptoms, characteristics and location of the cyst [28]. The majority of vitreous cysts are asymptomatic, which usually requires only observation and regular follow-up. Therapeutic options include argon laser

photocoagulation or Nd:YAG [29, 30], or vitrectomy with histopathological examination to determine the benign or malignant nature of the cyst [31]. However, these treatments can cause complications such as iatrogenic cataract [32]. In our case, a combined phacoemulsification, vitrectomy with posterior iris claw intraocular lens implantation was performed, given the presence of a subluxated lens and an intravitreal hemorrhage that did not resolve after 03 months.

CONCLUSION

Pigmented or non-pigmented vitreous cysts are exceptional, and originate from the pars ciliaris or hyaloid system. They are often asymptomatic and discovered incidentally, requiring no special treatment. Treatment of vitreous cysts must be carried out with caution and in accordance with the indications.

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