

A Pigmented Posterior Vitreous Cyst in a Young Boy

Moutushi Islam¹, Rubina Akhter², Tasruva Shahnaz³, Md. Ripon Ali⁴, Bilkis Akhter⁵, Md. Saleh Ahmed⁶

Abstract

Vitreous Cysts are Very rare ocular malformations. In this observational case study, we report an unusual case of a pigmented free-floating vitreous cyst in retrolental space in a seven-year-old boy. His father complained of head turning to the right side for two months. Visual acuity was 20/20 and N5 in Both eyes. The Dilated fundus examination was unremarkable bilaterally except for a piece of brownish spherical free-floating material in the anterior vitreous. A thorough eye examination with ultrasound b scan and ultrasound bio microscopy was done to rule out any other associated condition.

Key words: Vitreous cyst, trivial trauma, congenital cyst

Introduction

Vitreous cysts are particularly rare ocular malformations in otherwise normal eye and in diseased eye. Patients most often remain asymptomatic or may complain of floaters or transient blurring. The first description of vitreous cyst was in 1899 by Tansley, as an irregularly spherical cyst that showed lines of pigment on its surface. We report here an unusual case of dislodged pigmented free-floating cyst in vitreous.

Case report

A 7-year-old boy presented to our out-patient department with complaint of head turning to right side for 2 months. There were no associated symptoms like redness or pain. He had no history of trauma. His birth history is uneventful. On examination his best corrected visual acuity was 6/6 and N5 in both eyes. External eye examination was unremarkable. The anterior segment was quiet. A spherical translucent cyst about 4 mm in

diameter with pigment dusting along its wall was seen floating in the anterior vitreous, slightly inferotemporal to the visual axis, in the retrolental space of left eye. No posterior vitreous detachment was noted.

Blood investigation showed normal erythrocyte sedimentation rate and differential count. Ultrasound B scan and ultrasound bio microscopy (UBM) were performed. Ultrasound B scan confirmed the cyst's retro lental location and absence of any hyper dense echo within the cyst, suggestive of a scolex.

Due to the limited visual disturbance, innocuous nature of the cyst and young age of the patient, conservative treatment with periodic follow up was recommended without any intervention.

Discussion

Intraocular cysts have been classified into those that occur in the anterior chamber of the eye, those in the retro lental space and those in the

1. Associate Professor, Bashundhara Eye Hospital and Research Institute, Bangladesh
2. Assistance professor, Bashundhara Eye Hospital and Research institute, Bangladesh
3. Consultant, Bashundhara Eye Hospital and Research institute, Bangladesh
4. Senior Register, Bashundhara Eye Hospital and Research institute, Bangladesh
5. Medical Officer, Bashundhara Eye Hospital and Research institute, Bangladesh
6. Professor, Vitreo retina, Bashundhara Eye Hospital and Research Institute, Bangladesh

Address of Correspondence: Dr. Moutushi Islam, Associate Professor, Bashundhara Eye Hospital and Research Institute, Bangladesh

vitreous cavity (Orellana et al.,1985).



Figure 1 and 2: Slit-lamp photographs of the left eye showing the floating cyst with pigmented wall

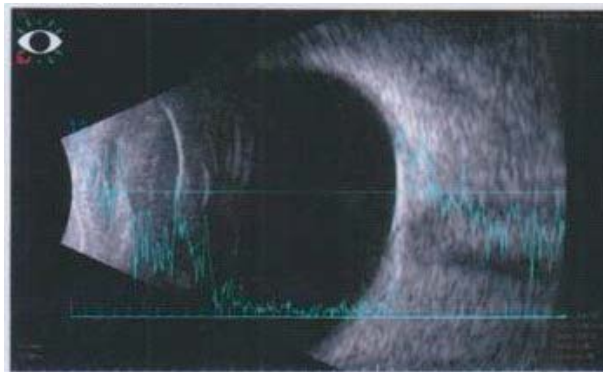


Figure 3: USG scan showing cystic mass lesion noted in the retrolental space with high surface reflectivity and low internal reflectivity

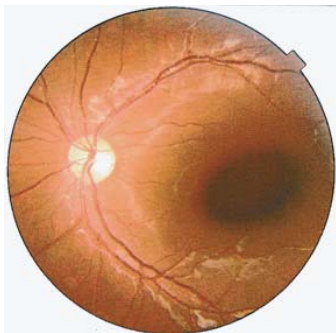


Figure 4: The shadow cast by the cyst on the left fundus

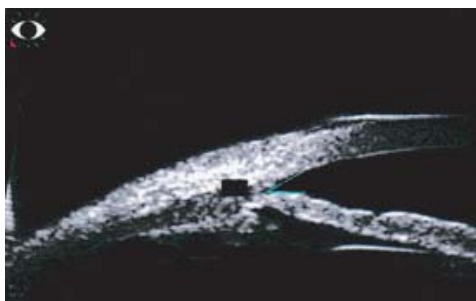


Figure 5: UBM of left eye shows normal structure

Vitreous cysts are a sufficiently uncommon ocular disorder to be considered an ‘ocular curiosity’ (Brue et al., 2012). Free-floating vitreous cysts have been classified mainly into congenital and acquired varieties (Cruciani et al., 1999). Congenital cysts originate from remnants of the hyaloid artery or glial remnants of Bergmeister’s papilla. These cysts are usually located anterior to the optic disc; some get dislodged into the anterior chamber or angle (Orellana et al., 1985).

Acquired vitreous cysts have been described in patients with uveitis (Cruciani et al., 1999), toxoplasmosis (Cruciani et al., 1999), parasitic vitritis (Cruciani et al., 1999), and nematode endophthalmitis (Orellana et al., 1985), retinal detachment, retinoschisis, and retinitis pigmentosa (Cruciani et al., 1999), cystic growth at a site of a coloboma that enters the vitreous cavity (Orellana et al., 1985). Orellana et al studied aspirated pigmented cysts by light and electron microscope and observed that the pigmented layer of cuboidal cells contains melanosomes, suggesting that the cyst takes its origin from the pigmented epithelium of iris, ciliary body and retina (Orellana et al., 1985).

Intraocular cysts have a plethora of presentation. Both children of 6-8 years old (Brianchi et al., 1997) and adults have been reported to present with intraocular cysts, although it is mostly between 10 to 20 years of age. They can be seen in the anterior chamber of the eye, in the retrolental space or in the vitreous cavity. Cysts of various shapes and sizes between 0.15mm to 12mm have been reported. Cysts can have a yellow-gray (non-pigmented) or brown (pigmented) appearance (Cruciani et al., 1999). Morphologically, congenital cysts are almost always translucent. On the other hand, acquired cysts usually appear opaque or only slightly translucent. Parasitic cysts usually have thick walls and are creamy-white in color (Bayraktar et al., 2003).

Besides clinical examination, serological tests for intraocular infection, ultrasound or OCT detection of scolex inside the cyst may help to make the correct diagnosis (Sinha et al., 2012). UBM is

used to look for cysts arising from iris/ciliary body structures and CT brain & orbit and ultrasound abdomen to rule out extraocular cysts in case of parasitic etiology.

In our patient, the presentation more or less complies with that given in literature. Age at presentation was 7 years. Besides, the morphology was that of a slightly translucent and pigmented cyst freely floating in the anterior vitreous in a quiet eye. We feel in addition to the above classification, a cyst floating in vitreous cavity should be classified as clear, pigmented and translucent. A differential diagnosis for acquired cyst was made initially. However, the pigmented nature, absence of significant inflammation optic-nerve perivasculitis taken in conjunction with normal blood test excluded nematode infection. Some trivial traumas may have caused dislodgement of the cyst from the ciliary body.

These intraocular cysts are usually asymptomatic unless they involve the visual axis, when they are associated with blurring of vision (Nork and Millecchia, 1998) or when they are mobile, they cause floaters. May also cause visual field defects, or secondary glaucoma.

Most importantly they need to be differentiated from other potentially serious conditions like malignant melanoma (Tuncer and Bayramoglu, 2011). Management is mostly conservative except in symptomatic cysts where Argon laser photocoagulation, neodymium: YAG laser treatment and pars plana vitrectomy with surgical removal of cyst are possible treatment options (Nork and Millecchia, 1998) (Ruby and Jampol, 1990) (Jones, 1990). Prognosis is usually excellent as most of them do not increase in size.

Conclusion

This case presents the rare phenomenon of a free-floating vitreous cyst. These cysts can occasionally cause a significant visual impairment. Treatment remains optional. Nevertheless, a prompt and detailed clinical examination is required to rule out other infectious and malignant conditions.

References

1. Bayratkar, Z., Kapran, Z. & Ozdogan, S. (2003). Pigmented congenital vitreous cyst. *European journal of ophthalmology*; 14:156-158.
2. Bianchi, P., Guagliano, R., Salati, R. & Traselli, G. (1997). A pigmented free-floating vitreous cyst in a six-year-old child. *Ophthalmologica*; 211: 391-393.
3. Brue, C., Mariotti, C., De Franco, E., De Franco, N. & Giovannini, A. (2012). Pigmented free-floating posterior vitreous cyst. *Case reports in ophthalmological medicine*; 2012.
4. Cruciani, F., Santino, G. & Salandri, A. (1999). Monolateral idiopathic cyst of the vitreous. *Acta Ophthalmologica Scandinavica*; 77: 601-603.
5. Jones, W. L. (1998). Free-floating vitreous cyst. *Optometry & Vision Science*; 75: 171-173.
6. Nork, T. M. & Millecchia, L. L. (1998). Treatment and histopathology of a congenital vitreous cyst. *Ophthalmology*; 105: 825-830
7. Orellana, J., O'malley, R. E., Mepheron, A. R. & Font, R. L. (1985). Pigmented free-floating vitreous cysts in two young adults: electron microscopic observations. *Ophthalmology*; 92: 297-302.
8. Ruby, A. J. & Jampol, L. M. (1990). Nd: YAG treatment of a posterior vitreous cyst. *American journal of ophthalmology*; 110: 428-429.
9. Sinha, S., Takkar, B., Venkatesh, P. & Khanduja, S. (2012). High-resolution Fourier-domain optical coherence tomography Findings in subretinal cysticercosis. *Retina*; 32: 643-4.
10. Tuncer, S. & Bayramoglu, S. (2011). Pigmented free-floating vitreous cyst in a Patient with high myopia and uveal coloboma Simulating choroidal melanoma. *Ophthalmic Surgery, Lasers and Imaging Retina*.