The Sanguine Imposter: A Case Report on A Late-Onset, Post-Traumatic Intraorbital Hematoma, Masquerading as A Pseudomeningocele

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Abstract

Late-onset subperiosteal orbital hematomas are an uncommon consequence of orbital trauma. This following case report is a highlight on such a rare case of an intraorbital hematoma, presenting after an old orbital trauma, which mimicked a pseudomeningocele on initial evaluation. This is to our knowledge, one of its kind, as a case of acute unilateral proptosis occurring as a very late presention of a decade-old orbital trauma.

Key-words: Sanguine Imposter, Hematoma, Abaxial Proptosis

HISTORY

A 30-year-old male presented with sudden onset of painless protrusion of the left eye. It gradually progressed over a period of two weeks, to attain the status at the time of presentation (Fig. 1). He gives history of a road traffic accident that occurred 10 years ago. In the accident, the patient sustained injury to the left side of the face, and he also developed diplopia. He had undergone maxillofacial surgery for the same and had recovered completely following the intervention.

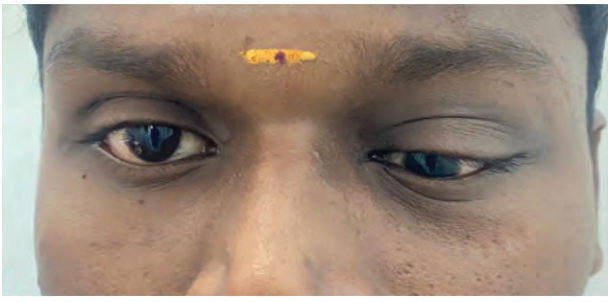

Fig. 1: 30-year-old patient presenting with acute onset of left, abaxial proptosis.

EXAMINATION

On inspection, the patient had a vision of 20/20 in the right eye and 20/80 in the left eye, measured using the ETDRS visual acuity chart. On inspection, the patient had an abaxial proptosis of the left eye. On palpation, there was no warmth or tenderness over the left eye. There was firm resistance felt on retropulsion of the same eye. There was a defect noted on palpation of the left superomedial rim, with inability to insinuate the finger in the left superior quadrant. The amount of proptosis was measured to be 4 mm, done using the double Luedde exophthalmometer. On evaluation of the extraocular movements, there was restricted elevation and abduction of the left eye (Fig. 2). Anterior segment examination was found to be normal in both eyes. The intraocular pressure was 14 mm of Hg in the right eye and 18 mm of Hg in the left eye. Fundus examination showed the presence of multiple transverse striations across the superotemporal quadrant and the macula, suggestive of folds in the Internal Limiting Membrane (ILM) (Fig. 3).

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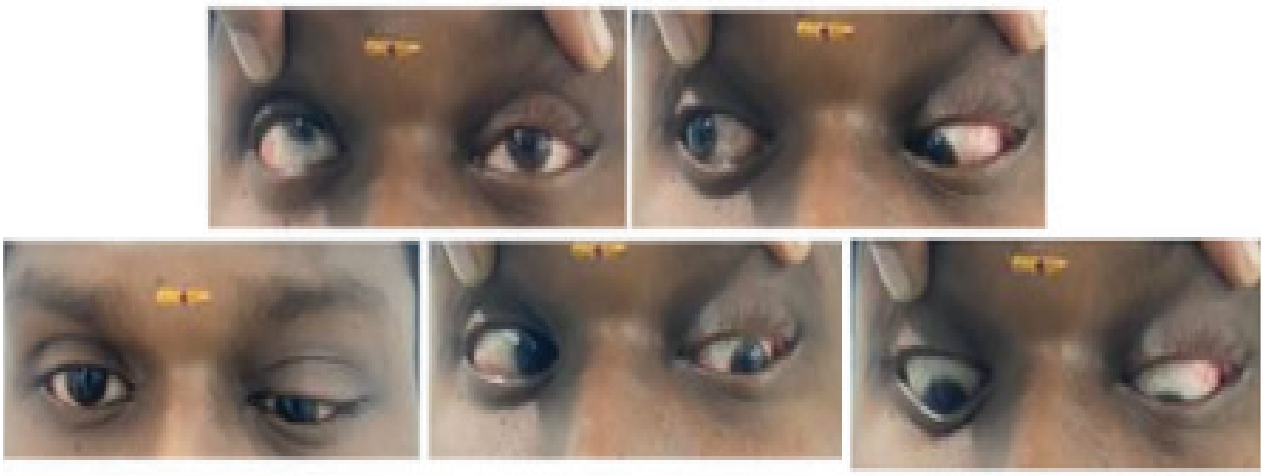

Fig. 2: Extraocular movements show restriction of elevation and abduction of the left eye.

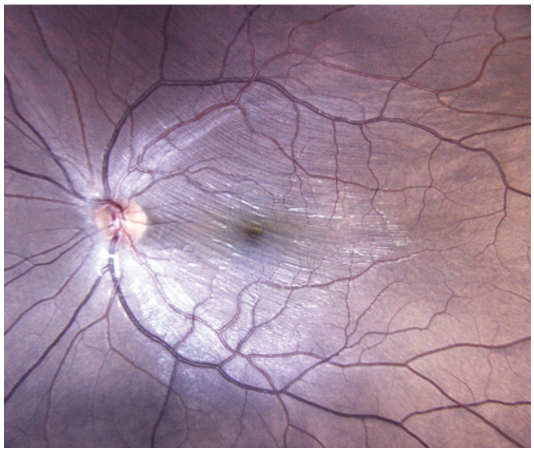

Fig. 3: Fundus photograph of the left eye showing the presence of ILM folds over the posterior pole.

OCULAR INVESTIGATIONS

B scan ultrasonography of the left eye was done, which showed the presence of an extraglobal mass indenting on the ocular coats in the superior aspect of the globe. Optical Coherence Tomography (OCT) of the macula was done, which confirmed the presence of ILM folds in the posterior pole (Fig. 4). Based on the above findings, a provisional diagnosis of abaxial proptosis of the left eye secondary to an intraorbital tumour was made.

IMAGING

The patient was requested to undergo a Computed Tomography (CT) evaluation focusing on the left orbit. He was found to have an old orbital roof fracture with a cystic mass resembling a pseudomeningocele, extending into the extraconal space of the left eye (Fig. 5). Further imaging of the orbit was done by Magnetic Resonance Imaging (MRI). The MRI confirmed the findings of the CT and showed a left sided intraorbital, extraconal hemorrhagic collection in the superolateral aspect, causing a mass effect on the globe, suggestive of an intraorbital hematoma (Fig. 6).

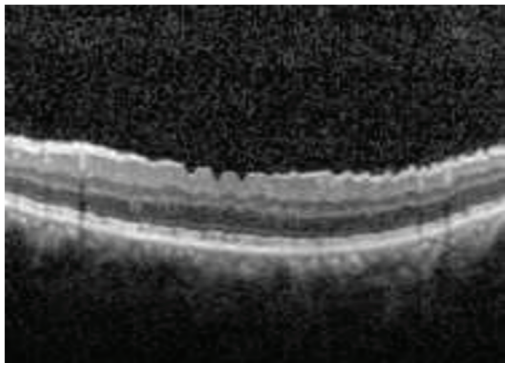

Fig. 4: OCT macula of the left eye confirms the presence of ILM folds

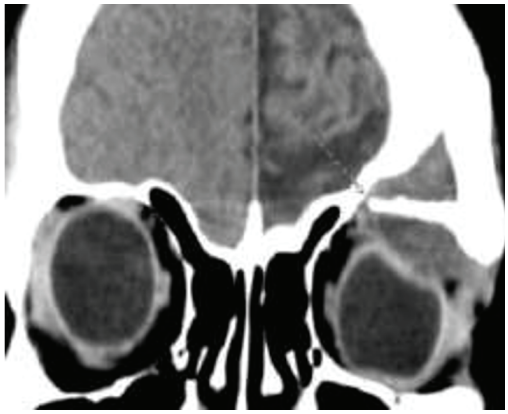

Fig. 5: CT image shows the presence of an orbital roof fracture with a pseudomeningocele, extending into the extraconal space of left eye.

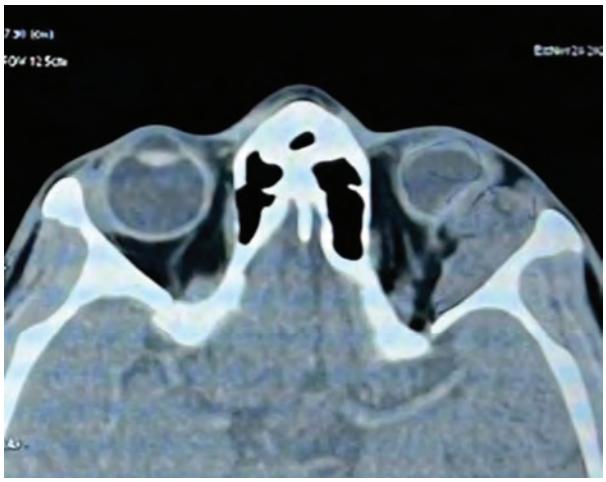

Fig. 6: MRI shows the presence of an intraorbital hematoma compressing on the left globe.

MANAGEMENT

A multidisciplinary surgical team consisting of a neurosurgeon, a maxillofacial surgeon and an oculoplastic surgeon was assembled and excision of the pseudomeningocele, with repair of the orbital roof defect was planned. Intra-operatively, the mass was found to be an amber-coloured, fluid-filled cystic swelling. The mass was carefully excised and was sent to histopathology along with its contents. Histopathology showed the presence of hemorrhagic debris encysted in a fibrocollagenous capsule, suggestive of an old hematoma.

FOLLOW-UP

The patient was followed up at one month after the surgical procedure. There was complete resolution of the proptosis (Fig. 7), with improvement of vision in the left eye from 20/40 to 20/20. Evaluation of the fundus also showed complete resolution of the ILM folds (Fig. 8).

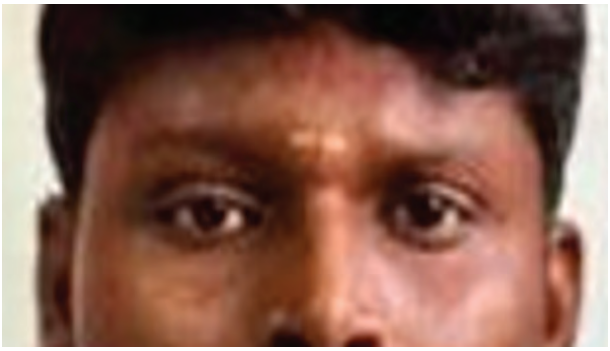

Fig. 7: Patient shows a complete resolution of proptosis at the end of one month following surgery.

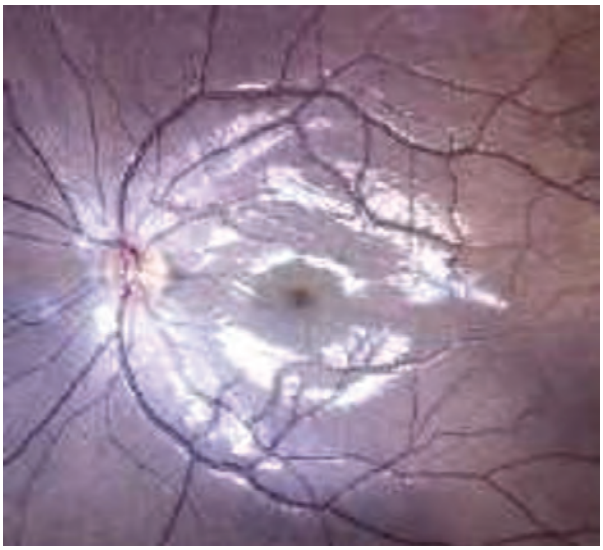

Fig. 8: Complete resolution of the ILM folds in the fundus photograph of the left eye following surgery.

DISCUSSION

Orbital hematomas are also known as 'blood cysts', as reported in early literature. They occur secondary to bleeding inside the orbit, which usually presents as proptosis, ophthalmoplegia and visual impairment.[1] These are usually progressive in nature, which can evolve and may cause sight-threatening complications due to pressure on the orbital contents.[2] These hematomas may occur secondary to trauma, which may be accidental or surgical, and also due to other causes such as sinusitis, coagulation disorders, retrobulbar injections, and even osteogenesis.[3] Superiosteal hematomas need to be considered as a differential diagnosis in cases of acute post-traumatic, unilateral proptosis.[4] Orbital hematomas secondary to trauma are reported to be a rare occurrence, and those occurring nearly a decade later as acute unilateral proptosis, as in our case, have not been reported in literature. Imaging studies in the form of ultrasound and CT evaluation of the orbit is necessary in such cases of post-traumatic proptosis to rule out the presence of an intraorbital mass.[5] Untreated intraorbital hematomas may progress to the formation of chronic hematic intraorbital cysts,[6] which may explain the appearance of the mass as a cystic pseudomeningocele in our initial CT evaluation. However, in such instances, MRI of the orbit is the investigation of choice in distinguishing between pseudomeningocele and epidural or subperiosteal hematomas, as evidenced in our case.[7] Conservative management may be adopted in cases where vision is not affected, which may range from observation to the use of

hyperosmotic agents to reduce the intraorbital pressure.[8] However, since our patient had a deterioration of vision, immediate excision was planned, and the orbital roof defect was repaired. The presence of an old orbital roof fracture is postulated to be the source of the bleed in our case. The orbital roof defect with an intraorbital cystic mass, warranted a multidisciplinary surgical approach in our case. Intra-operative and post-operative analysis showed the mass to be a hematoma mimicking as a pseudomeningocele. Surgical excision was followed by a rapid and complete resolution of the lesion.

CONCLUSION

This case thus throws light on multiple core tenets to be considered in cases of proptosis following trauma. One of the tenets is that intraorbital hematomas should be considered as a differential diagnosis in all cases of acute proptosis, despite the time interval between the trauma and the presentation of proptosis. The second tenet is that imaging must be done to understand the nature of the lesion and to identify defects in other orbital structures such as old orbital fractures. The investigation of choice in such cases is MRI of the orbit. Lastly, immediate surgical excision is warranted in cases where there are pressure effects on the globe due to the intraorbital mass such as rise in intraocular pressure or deterioration of vision.

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Nil.

CONFLICTS OF INTEREST

There are no conflicts of interest.

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