

Subconjunctival Fat Prolapse: What Radiologists Need to Know?

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ABSTRACT

Subconjunctival fat prolapse is a rare benign entity or disease presenting as fat containing epibulbar mass in lateral canthus region. Weakness of Tenon's capsule secondary to age, trauma or any surgery leads to herniation of intraconal fat. Radiologists should be aware of the condition and its imaging features. We report a case of 70-year-old obese man presenting with bilateral soft yellowish lateral canthal mass. Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) showed typical imaging features of epibulbar fatty lesion in continuation with the intraconal fat.

Keywords: Computed Tomography, Epibulbar mass, Magnetic Resonance Imaging, Subconjunctival fat prolapse

CASE REPORT

A 70-year-old obese man presented with painless, bilateral, soft, yellowish, oval shaped, non pulsatile mass measuring approximately 1.5x1 cm on both sides with convex anterior margins and superficial fine blood vessels at the lateral canthal area [Table/Fig-1a,b]. The masses were present since two years which was gradually progressive in size. It was not associated with any obscuration of vision and visual acuity of 5/6 bilaterally and fundoscopy was normal. It was not associated with inflammation. There was no history of trauma. On compression over the mass, it disappeared and reappeared on retropulsion of the globe. The size was gradually increasing with time. Axial CT scan showed herniated fat showing an attenuation of -50 to -90 HU at the superotemporal aspect of the bilateral epibulbar areas [Table/Fig-1c]. The prolapsed fat was continuous with the intraconal fat lying between the lateral walls of the eyeball medially and the lateral rectus muscle laterally. T1W and T2W images on Magnetic Resonance Imaging (MRI) show hyper-intense well-defined superotemporal epibulbar masses [Table/Fig-1d,e]. Imaging features were consistent with subconjunctival fat prolapse. Imaging differential diagnosis was dermolipoma. However, dermolipoma presents in younger age group as hairy yellowish

temporal epibulbar mass, non reducible on compression. On CT and MRI, it does not communicate with retrobulbar fat. Associate calcification may be seen in dermolipoma.

These lesions were not causing any significant discomfort to the patient other than fear of "tumour" according to the patient. Patient was advised for surgical excision of the lesions. However, after imaging evidence and assurance from the treating physician that it was a benign condition, the patient did not want to undergo any surgical procedure and opted for follow up and was happy.

DISCUSSION

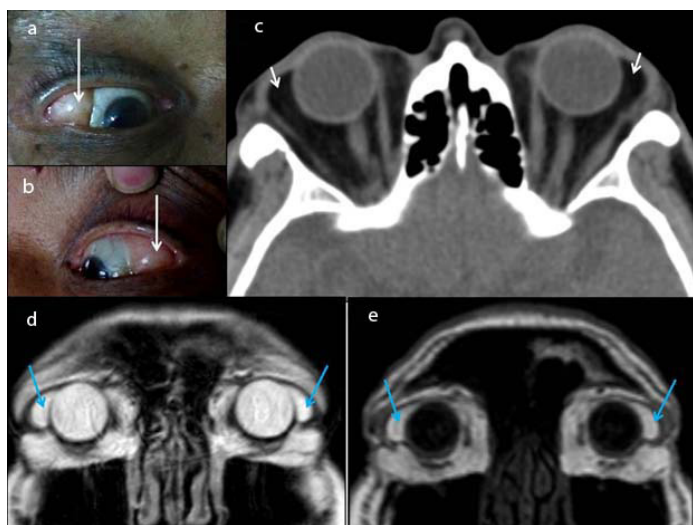
The pathogenesis of subconjunctival fat prolapse is thought to be herniation of intraconal fat due to an acquired weakening of the Tenon's capsule and intermuscular septum by age related degenerative process [1,2]. However, rarely the young patient secondary to trauma or surgery may develop the subconjunctival prolapse [3]. It is mostly seen in elderly obese men of 65-72 years [4,5] as seen in our case. Clinically, patient presents as epibulbar yellowish mass in lateral canthal region mostly bilateral. On applying compression over the mass with cotton, the lesion may disappear and reappear on retropulsion of the globe [1,2]. This finding is in concordance with our findings.

On CT imaging, the subconjunctival fat prolapse is seen as fat density lesion in superotemporal area of epibulbar region lateral to the lateral wall of the globe and medial to the lateral rectus and lacrimal gland with continuation of the fatty lesion with the intraconal fat [5,6]. On MR imaging, it appears hyper-intense on T1W and T2W images and in continuation with intraconal fat. Post contrast images show no enhancement and no evidence of any calcification [6].

In a retrospective study by Kim E et al., from 1995 to 2009 described 33 patients with surgically and pathologically proven subconjunctival fat prolapse. However, cross-sectional imaging (CT/MRI) was available only in eight patients. Out of which, bilateral subconjunctival fat prolapse was seen in seven patients and unilateral in one patient [6]. All cases showed fatty epibulbar mass near lateral rectus insertion in continuation with the intraconal fat. Our case was also showing bilateral epibulbar fatty mass communicating with the intraconal fat.

Skorin LJ et al., reported a case of subconjunctival fat prolapse in an 84-year-old male where they described clinical findings, CT features and the surgical management [7].

Differential diagnosis of epibulbar fat density lesion on imaging is dermolipoma which clinically presents as non pulsatile and non



[Table/Fig-1]: a and b) Bilateral soft yellowish mass with convex anterior margins and superficial fine blood vessels at the lateral canthal area (arrows); c) Axial CT scan showing herniated fat at the superotemporal aspect of the bilateral epibulbar areas (arrows). The prolapsed fat was continuous with the intraconal fat lying between the lateral wall of the eyeball medially and the lateral rectus muscle laterally; d and e) T2W and T1W MRI images showed hyper-intense well-defined superotemporal epibulbar masses (arrows).

mobile yellowish epibulbar mass with hairy surface. It occurs early in life. On imaging dermolipoma lies anterior to the insertion of the lateral rectus muscle and medial to the lacrimal gland, without connection to the intraconal fat. Thus imaging can easily differentiate between the two entities.

Surgical excision is the recommended treatment for subconjunctival fat prolapse in case of discomfort or for cosmetic purpose. There are various techniques of removal and repositioning of prolapsed fat described in literature, like excision of prolapsed fat followed by suturing of conjunctiva with absorbable suture, repositioning of prolapsed fat followed by suturing of bulbar conjunctiva with the sclera [1,3]. Skorin LJ et al., described a technique of excision of prolapsed fat without any conjunctival suturing [7]. Modified technique like repositioning of the prolapsed fat followed by application of fibrin glue instead of suturing to approximate the conjunctival flap to the sclera has also been described in literature [8]. However, in our case patient didn't go for any surgical intervention as assurance was given from the treating physician that it is a benign condition and it will not cause any harm.

CONCLUSION

Subconjunctival fat prolapse is a rare entity, seen mostly in elderly age group due to weakening of Tenon's capsule. Imaging is seldom performed. However, CT and MR imaging features are typical and

shows fat containing epibulbar mass in superotemporal region in continuation with the intraconal fat. Radiological diagnosis helps to alleviate the anxiety of patients that it is not a neoplastic lesion and can be followed up safely without undergoing any surgical procedure until it causes obscuration of vision.

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