

Inferotemporal orbital fat prolapse: a case report

Julian A Chan¹, Hunter KL Yuen^{1,2}, Andre Ma^{1,2}, Clement CY Tham^{1,2}

¹ Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, Hong Kong SAR, China

² Hong Kong Eye Hospital, Hong Kong SAR, China

Correspondence and reprint requests:

Dr Julian A Chan, Department of Ophthalmology and Visual Sciences, The Chinese University of Hong Kong, Hong Kong SAR, China.

Email: julianalexchan@gmail.com

Abstract

Orbital fat prolapse is a benign condition commonly seen in the superotemporal region among older men. Surgery is indicated for cosmetic concerns or ocular discomfort. We report a rare case of inferotemporal orbital fat prolapse in a middle-aged man.

Key words: Adipocytes; Orbit

Introduction

Orbital fat prolapse is a benign and common condition characterized by the herniation of intraconal fat into the subconjunctival space, possibly due to age- or trauma-related weakening of Tenon's capsule.¹ It occurs more frequently in older obese men, with bilateral presentation in half of cases. Most cases occur superotemporally, with nasal quadrant involvement being less frequent.² We report a rare case of unilateral inferotemporal orbital fat prolapse in a middle-aged man. Differential diagnoses such as lymphoma and adipocytic neoplasms should be excluded.

Case presentation

In January 2025, a 51-year-old man presented with a 2-year history of a slow-growing lesion on his left eye. He had hypertension and hyperlipidemia and had undergone laparoscopic cholecystectomy for gallstones in 2019. Physical examination revealed a 5-mm yellow subconjunctival mass over the inferotemporal region. The lesion was soft, mobile with a smooth surface and overlying blood vessels (**Figure**). The posterior border of the lesion could not be visualized. A clinical diagnosis of inferotemporal orbital fat prolapse was made.

The patient underwent surgical excision of the lesion under local anesthesia. The herniated fat was clamped, cut, and

cauterized. Hemostasis was performed, and the wound was closed with 8-0 Vicryl sutures.

Discussion

Only one case of inferotemporal orbital fat prolapse has been reported in the literature.³ The pathogenesis involves the weakening of Tenon's capsule and the intermuscular septum, typically secondary to aging, trauma, or surgery.⁴ Orbital fat prolapse in the inferotemporal location is rare because involutional changes in the lower eyelid typically weaken the orbital septum, resulting in anterior fat herniation (eye bags) rather than subconjunctival fat prolapse.⁵

Differential diagnoses of orbital fat prolapse depend on patient age. In older patients, orbital tumors such as lymphoma, liposarcoma, and pleomorphic lipoma are possible diagnoses.⁶ Lymphoma typically presents as a 'salmon patch' of swollen conjunctiva that is firm on palpation, adherent to surrounding planes, and usually involves more rapid progression. Conjunctival neoplasms and lacrimal gland prolapse are also likely.⁷ Among younger patients, dermolipoma and dermoid cysts are possible diagnoses. Dermolipomas are congenital lesions that typically present as well-circumscribed, firm, immobile, yellow fusiform masses in the lateral canthal region.⁸

Computed tomography and magnetic resonance imaging are useful tools to distinguish the mass. Orbital fat prolapse appears as a homogeneous tissue continuous with intraconal fat, without calcifications or post-contrast enhancement.⁹ Anterior segment optical coherence tomography can reveal microscopic details (such as non-encapsulated fat lobules and fibrous septa) and can differentiate prolapsed orbital fat from lymphomatous lesions, which appear as hyporeflexive homogeneous masses.³ Similarly, ultrasound biomicroscopy shows prolapsed orbital fat as a smooth, unencapsulated mass with medium reflectivity. Additionally, histology can reveal lobulated mature adipocytes separated by delicate fibrovascular septa, with distinctive features

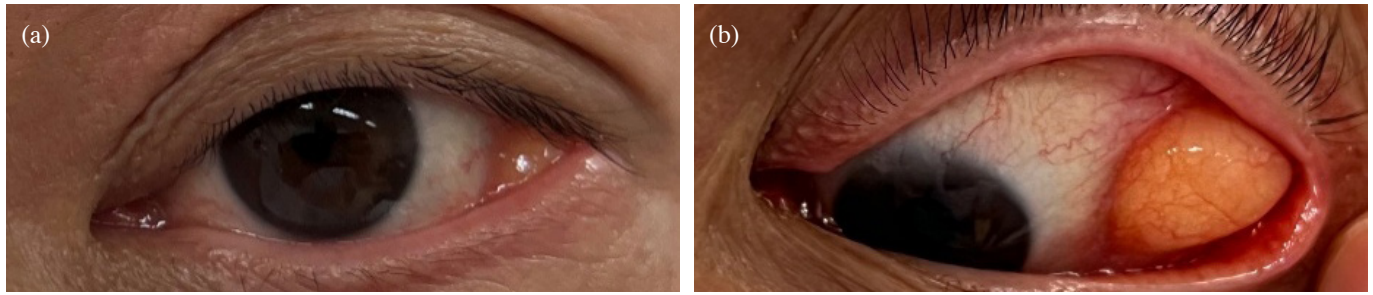


Figure. Inferotemporal orbital fat prolapse in the left eye is shown in (a) primary gaze and (b) right gaze. The smooth yellow subconjunctival lesion has fine superficial vessels overlying the surface.

such as Lochkern cells (normal adipocytes with intranuclear vacuoles) and floret-like giant cells, both of which aid differentiation from neoplasms.¹⁰

Surgery for orbital fat prolapse is indicated for ocular discomfort or cosmetic concerns. It typically involves transconjunctival excision of the herniated fat, followed by closure of the conjunctiva and Tenon's capsule using interrupted sutures.¹¹ Suture-less techniques have demonstrated good outcomes and low recurrence rates.¹² Another technique involves repositioning the subconjunctival orbital fat prolapse using a muscle hook through a small incision.¹³ A less invasive technique involves conjunctival fixation to the sclera without conjunctival incision or fat resection.¹⁴ No one technique is superior to another; the surgical approach should be individualized according to patient needs and the expertise of the surgeon.

Contributors

All authors designed the study, acquired the data, analyzed the data, drafted the manuscript, and critically revised the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved

the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

As editors of the journal, HKLY and CCYT were not involved in the peer review process. Other authors have disclosed no conflicts of interest.

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Data availability

All data analyzed in this study are available from the corresponding author upon reasonable request.

Ethics approval

The patient was treated in accordance with the tenets of the Declaration of Helsinki. The patient provided written informed consent for all treatment and procedures and for publication.

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