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Case Report / *Olgu Sunumu*

Subconjunctival Orbital Fat Herniation: Repair with a New Technique in one Case

Subkonjontival Orbital Yağ Fıtıklaşması: Bir Olguda Yeni Bir Teknikle Onarım

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Summary

Spontaneous subconjunctival intraconal herniated orbital fat is a rare clinical condition. The common approach to herniated orbital fat treatment is excise the "excess fat". This paper discusses the possible explanations for spontaneous herniated orbital fat and offers a newly detailed surgical technique of relocating and repression rather than excision in a case. *(Turk J Ophthalmol 2013; 43: 208-10)*

Key Words: Herniated orbital fat, surgery

Özet

Kendiliğinden olan subkonjonktival intrakonal fıtıklaşmış orbital yağ nadir bir klinik durumdur. Fıtıklaşmış orbital yağ tedavisinde yaygın yaklaşım aşırı yağın eksizyonudur. Bu yazı kendiliğinden olan fıtıklaşmış orbital yağ için olası açıklamaları tartışacaktır ve yeni, detaylı, eksizyondan ziyade yeniden yerleştirme ve baskılama cerrahi tekniğini sunacaktır. *(Turk J Ophthalmol 2013; 43: 208-10)*

Anahtar Kelimeler: Fıtıklaşmış orbital yağ, cerrahi

Introduction

Orbital fat is divided into two compartments by the extraocular muscles and the intermuscular septum. Intraconal fat lies inner to this layer, and extraconal fat is external to it.[1] The outer surface of intraconal fat anterior to equator is enveloped by intermuscular septum; the inner surface is coated by Tenon's capsule lying between the fat and the sclera.[2] Extraconal fat is bordered by the orbital periosteum (outside), extraocular muscles and Tenon's capsule (inside), and the orbital septum (anterior).[3]

With aging, orbital septum becomes thinner and weaker, and extraconal fat may herniate, causing the well-known palpebral bags. Besides, surgery, trauma, or disease may cause a rent in the surrounding connective tissue including Tenon's capsule, the orbital septum, and Lockwood ligament allowing the extraconal fat to herniate into the eyelids or the intraconal fat to herniate into the subconjunctival space, medial to the lacrimal gland.[3]

The intraconal herniated orbital fat (HOF) may be confused with other lesions, such as lacrimal gland ptosis, lacrimal gland tumors, lipodermoids, and lymphoid tumors. The clinical, histopathological and computed tomographic findings are helpful in the differential diagnosis.

The common approach to HOF treatment is excise the 'excess' fat.[1,4,5] We report the case of a patient with unilateral spontaneous superotemporal subconjunctival HOF who was treated by relocating and repression rather than excision.

Case Report

A 74-year-old, non-obese (Body mass index <25 kg/m^2) male patient presented with a unilateral epibulbar mass in the superotemporal quadrant of right eye. The patient had no history of systemic disease, orbital trauma, inflammation, infection,

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hemorrhage, or ocular surgery. The mass had a superficial vascular pattern and the well-defined anterior border was soft, yellow, slightly elevated, convex-shaped, easily repositioned into the orbit with a cotton tip applicator, and it could be made more prominent by retropulsion of the globe. The presumed diagnosis was subconjunctival HOF (Figure 1a). The palpebral lobe of the normal lacrimal gland could be distinguished from the fat prolapse by elevating the upper eyelid.

Preoperative magnetic resonance imaging (MRI) showed characteristic findings of low-density (fat compatible) areas between the sclera and the overlying lateral eyelid and conjunctiva (Figure 2). No abnormal lacrimal gland or an orbital mass was seen.

Local anesthesia was injected subconjunctivally directly into the area of HOF. An incision was made through the overlying conjunctiva. In this area, the conjunctiva was bluntly separated from the Tenon's capsule. It was observed that HOF was surrounded by a sheet of connective tissue (between Tenon's capsule and intermuscular septum) that was derived from both the conjunctiva and the sclera; the septum and the anterior Tenon's capsule were intact (Figure 3a). It was macroscopically evident that the revealed tissue was orbital fat. The HOF was pushed posteriorly. The intermuscular septum was sutured to the Tenon's capsule in the area of the HOF with interrupted 6-0 absorbable monofilament suture (6-0 polyglycolic acid suture, Steinberg, Belgium) and an average of five sutures was placed (Figure 3b). The HOF was retained posteriorly by this approximation of the intermuscular septum to the Tenon's capsule. The conjunctiva was closed with a continuous 8-0 absorbable monofilament suture (8-0 polyglycolic acid absorbable suture, Jestetten, Germany) (Figure 3c). Surgery was uncomplicated and cosmetic improvement was obtained. Figure 1 illustrates the preoperative, perioperative, and postoperative photographs of this patient.

During the follow-up period (18 months), any postoperative complications including recurrence, dry-eye symptoms or impairment of ocular motility caused by possible muscle restriction were not observed.

Figure 1. (a) Preoperative; (b) perioperative and (c) postoperative (at eighteen months) appearance of the herniated orbital fat at the superotemporal quadrant in a 74-year-old man

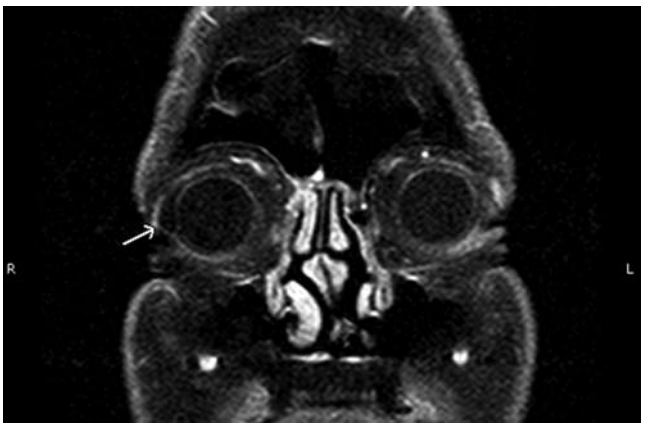

Figure 2. Magnetic resonance imaging of the same patient as Fig. 1 shows a unilateral mass (arrow) in the right orbit lying under intermuscular septum

Discussion

Subconjunctival HOF is an uncommon clinical condition, in contrast to the extraconal fat, which is a frequent finding such as herniated fat pads of the lower eyelids in patients over 60 years of age.[3] It usually occurs in elderly (average onset of 65 years) obese men, unilaterally or bilaterally in the superotemporal quadrant of the eye.[3] Clinically, (an elevated, soft, yellowish mass with superficial blood vessels and a convex well demarcated anterior border), distinction from other ocular pathologies including dermoid cysts, dermolipoma, lacrimal gland abnormalities, and subconjunctival lipomas is usually possible.[1] In this case report, the patient was male but not obese, and was diagnosed clinically by its typical local findings. Also, orbital imaging was helpful for the diagnosis.

Sires et al[6] demonstrated that superotemporal fat was not usually included in extraconal space. Furthermore, Koornneef reported that the thinnest intermuscular septum was in the superotemporal region.[7] In the light of this knowledge, because of slimming of the superotemporal intermuscular septum with ageing, the intraconal fat may come forward without trauma, and the HOF may be surrounded by stretched intermuscular septum.

The approach to treatment of HOF has frequently been to excise the "herniated fat"[1,2,4,5], but excision of the orbital fat may be difficult, and postoperative bleeding from the pedicle of the removed fat is a potential risk for a retrobulbar hematoma.[1]

Otaka and Kyu exhibited their surgical procedure lacking a

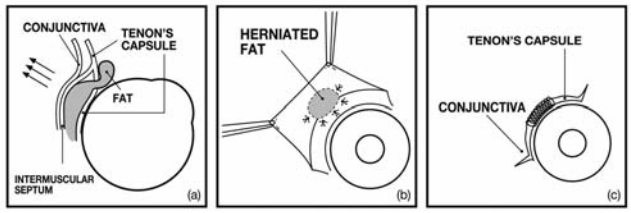

Figure 3. Schematics demonstrating of our surgical technique for subconjunctival herniated orbital fat (HOF). (a) Subconjunctival herniated orbital fat was surrounded by a sheet of connective tissue (between tenon's capsule and intermuscular septum) that was derived from both the conjunctiva and the sclera after an incision was made through the overlying followed by blunt separation of the conjunctiva from Tenon's capsule anterior to the equator. The HOF was pushed posteriorly. Note that septum and anterior Tenon's capsule were intact. (b) The intermuscular septum was sutured the Tenon's capsule in the area of the HOF with interrupted sutures. The HOF was retained posteriorly by this approximation of the intermuscular septum to the Tenon's capsule. (c) The conjunctiva was closed with a continuous suture

conjunctival opening: The HOF was pushed back, and the conjunctiva was fixed to the sclera with several stitches.[8] However, in this technique, serious complications such as choroidal hemorrhage or rhegmatogenous retinal detachment by an accidental scleral perforation or restriction of eye movements by deeper (more posterior) sutures may occur.

In our technique, conjunctiva was opened and the intermuscular septum was fixed to the Tenon's capsule with several shallow stitches to preclude damage to the globe. This fixation limits additional fat herniation with minimal trauma to the intermuscular septum.

We preferred this modification in the fat conserving technique to avoid serious complications and recurrence. Although further studies with many cases and long-term follow-up are needed to ascertain the safety and efficacy of this technique; relocating rather than removing of HOF seems to be more favorable in selected cases.

In view of the fact that we observed a lasting excellent result, we recommend the procedure in similar patients.

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