Modified Full Thickness Eyelid Transection for Eyelid Lengthening in Primary Congenital Eyelid Retraction: Case Report

Primer Doğumsal Üst Kapak Retraksiyonunda Kapağın Uzatılması İçin Modifiye Tam Kat Kalınlıkta Kapak Kesisi

Baki KARTAL,[a]
Duygu TEZ,[b]
Aytekin APİL,[c]
Erdinç CEYLAN[a]

[a]Clinic of Ophthalmology, Erzurum Regional Training and Research Hosptital, Erzurum
[b]Clinic of Ophthalmology, Kasımpaşa Military Hospital,
[c]Clinic of Ophthalmolgy, Dr. Sadi Konuk Training and Research Hospital, İstanbul

Geliş Tarihi/*Received:* 30.06.2013
Kabul Tarihi/*Accepted:* 03.12.2013

This case was presented as a poster at 14th ESCRS Winter Meeting, 12-14 Feb 2010, Budapest, Hungary.

Yazışma Adresi/*Correspondence:*
Baki KARTAL
Erzurum Regional Training and Research Hospital,
Clinic of Ophthalmolgy, Erzurum, TÜRKİYE/TURKEY
baki_kartal@yahoo.com

ABSTRACT In this case report, we present a 20-year-old male patient with primary congenital upper eyelid retraction in whom a modified full thickness eyelid transection (blepharotomy) was performed for cosmetic purposes. The diagnosis was established based on ophthalmologic examinations, biochemical analyses, and imaging methods. Eyelid crease, palpebral aperture and scleral show were measured pre- and post-operatively, and eyelid margin contour was evaluated. Under local anesthesia, a full-thickness blepharotomy along the length of the eyelid was performed by leaving approximately a 3-mm wide tarsoconjunctival bridge intact in the pupillary axis. After surgical intervention, 3mm ptosis/descent was achieved in the eyelid position. No asymmetry was detected between the right and left eyelid crease heights, and there was 1 mm asymmetry between the eyelid apertures. The present modified full thickness eyelid transection (blepharotomy) was considered a safe, effective and easy technique to be performed in primary congenital upper eyelid retraction.

Key Words: Eyelids; surgery, plastic; graves ophthalmopathy

ÖZET Primer doğumsal üst kapak retraksiyonlu 20 yaşındaki olguda modifiye tam kat kalınlıkta kapak transeksiyonu (blefarotomi) ameliyatının etkinliğini araştırmak amaçlanmıştır. Oftalmolojik muayene, biyokimyasal tetkikler ve görüntüleme yöntemleri ile kapak retraksiyonuna neden olabilecek diğer etyolojik faktörler dışlanarak primer doğumsal üst kapak retraksiyonu tanısı konuldu. Cerrahiden önce ve sonra kapak krizi, palpebral açıklık ve skleral show ölçümleri ile birlikte kapak kenar konturü değerlendirildi. Lokal anestezi altında pupiller eksende yaklaşık 3 mm genişliğinde bir tarsokonjonktival köprü bırakılıp kapak uzunluğu boyunca tam kat kalınlıkta blefarotomi yapıldı. Cerrahi girişim sonrasında kapak seviyesinde 3 mm düşme sağlandı. İki gözde kapak kıvrımı yükseklikleri açısından asimetri oluşmazken kapak seviyeleri arasında 1.0 mm asimetri olduğu gözlendi. Primer doğumsal üst kapak retraksiyonunda modifiye tam kat kalınlıkta kapak ıranseksiyonu (blefarotomi) tekniğinin güvenli, kolay öğrenilip uygulanabilen ve etkili bir yöntem olduğu düşünüldü.

Anahtar Kelimeler: Göz kapakları; cerrahi, plastik; graves oftalmopatisi

Turkiye Klinikleri J Case Rep 2014;22(4):273-6

Eyelid retraction may occur due to various neurogenic, myogenic or mechanical reasons.[1] In addition to accompanying conditions such as epiphora and foreign body sensation and associated complications such as punctate keratitis and corneal ulcerations in severe cases, eyelid retraction also represents a cosmetic problem for the patient. The aim of the surgical intervention is both to prevent corneal exposure and to provide cosmetic rehabilitation.[2] There are different surgical techniques including

mullerotomy, spacer material use, levator recession with adjustable sutures, central aponeurosis disinsertion, and modified levator recession, which are used together with levator aponeurosis recession or alone in upper and lower eyelid retraction caused by various reasons.[3-6]

Despite numerous diseases that lead to eyelid retraction, there is a short list of differential diagnosis for congenital unilateral upper eyelid retraction, particularly in the neonatal period. The most common reasons include thyroid ophthalmopathy, orbital hemangiomas, levator muscle fibrosis, and aberrant regeneration of the third cranial nerve.[7] The possibility of lack of etiological factors should be kept in mind in some patients with congenital eyelid retraction.[8] In the present case report, full thickness eyelid transection, which was previously defined in the treatment of Graves' disease, was modified and performed on a patient, who was diagnosed with primary congenital upper eyelid retraction after ruling out other etiological factors based on various preoperative analyses and in whom surgery was planned for cosmetic purposes.

CASE REPORT

Surgical intervention was planned for cosmetic purposes in a 20-year-old male patient, who was diagnosed with primary congenital upper eyelid retraction after ruling out etiological factors that are likely to cause eyelid retraction based on preoperative ophthalmologic examinations, biochemical analyses, and imaging methods (Figure 1). In the present patient, serum thyroxine level was normal and orbital magnetic resonance imaging (MRI) revealed no pathological finding in the extraocular muscles and superior rectus-levator muscle complex, as well as in the orbital content. Moreover, no clinical sign of aberrant regeneration of the third cranial nerve was detected. Synkinetic abnormalities such as Marcus Gunn jaw-winking phenomenon were not observed. The patient underwent a complete ophthalmologic examination including evaluation of visual acuity and slit lamp biomicroscopic examination the day before the surgery, as well as at the postoperative 1st day, 1st week, 1st month, 3rd month and 36th month. Palpebral aperture, scleral show, and eyelid crease were measured in mm, and the contour of the eyelid margin was evaluated. Based on the classification defined by Mourits and Koornneef, target surgical outcomes were as follows: 1) 0.5-1.5 mm covering of the cornea by the upper eyelid in the 12 o'clock position, 2) maximum difference being 1 mm in eyelid aperture between the right and left side, 3) smooth eyelid contour, 4) the eyelid crease being 7-10 mm from the eyelid margin, and 5) patient being satisfied. An informed consent was obtained from the patient.[4]

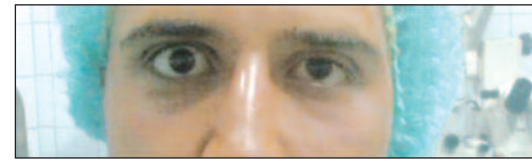

FIGURE 1: Before surgery.

Full thickness eyelid transection, which was previously defined for Graves' disease by Hintschich and Haritoglou, was modified and performed as the surgical method.[2] After sterilization of the surgical area and subcutaneous and subconjunctival local anesthesia using 1-1.5 mL bupivacaine 0.5% with adrenaline (1:200000), a transcutaneous skin incision was made at the level of the skin crease (Figure 2). In the original technique, all layers except the conjunctiva are transsected following skin incision, whereas in the present modified technique, a 3 mm tarsoconjunctival bridge was left in the pupillary axis when the tarsus was reached; thus, a full-thickness blepharotomy along the length of the eyelid was performed (Figure 3). Although Hintschich and Haritoglou emphasized that the central bridge of conjunctiva should be at least 3-4 mm to avoid ptosis development and to maintain a good and natural eyelid contour,[2] we formed a tarsoconjunctival bridge including the tarsus together with the conjunctiva to avoid potential postoperative ptosis (Figure 4). At the end of the surgery, approximately 1 mm covering of the cornea by the upper eyelid was provided, and the wound was closed using continuous subcutaneous 6/0 vicryl suture (Figure 5).

FIGURE 2: Intraoperative-1.

FIGURE 3: Intraoperative-2.

The patient was followed up for 36 months. Preoperatively, the upper eyelid retraction was 4 mm, and the scleral show was 2 mm. A 3 mm dropping at the lid margin was obtained after the surgery and by shortening the palpebral aperture, a symmetrical appearance with the other eye lid was achieved. No asymmetry was detected between the right and left eyelid crease heights, and there was 1 mm asymmetry between the eyelid apertures. At the end of the following period in the operated eye, upper eyelid margin was above 4.5 from pupillar axis and the case was received as succesful (Figure 6).

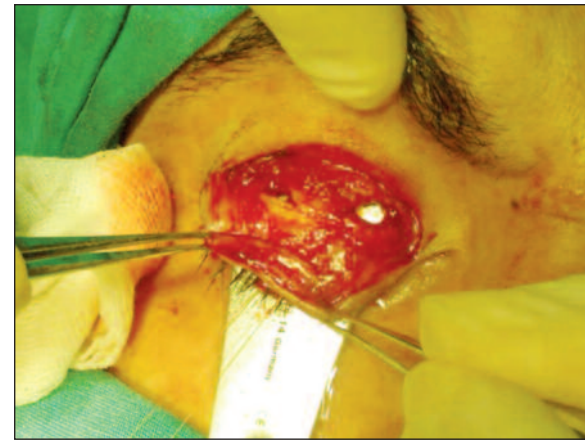

FIGURE 4: Intraoperative-3.

DISCUSSION

The method defined by Hintschich and Haritoglou is different from full thickness eyelid transection defined by Elner et al.[9] A central 3-4 mm bridge of conjunctiva left in the pupillary axis both maintain a natural and good eyelid contour and prevents postoperative ptosis. In the present modified technique, leaving a tarsoconjunctival bridge, including not only the conjunctiva but also the tarsus, was deemed suitable for the prevention of ptosis. The original technique was planned to be performed in a second surgery in the event of an insufficient correction or recurrence by dissecting the central tarsal tissue; however, the patient, who was followed for three months, did not require a second surgery.

FIGURE 5: After surgery.

FIGURE 6: 36th month after surgery.

Both the original technique and the present modified technique have some advantages in addi-

tion to predictable and satisfying anatomical outcomes. Firstly, both methods are simple and do not require advanced surgical skills or experiences as compared to the other methods defined in the past.[3-6] Secondly, both methods are applicable for the retraction of upper eyelid of any degree. In conclusion, the present study demonstrated that full thickness eyelid transection can be used for secure and safe lengthening of the upper eyelid in the primary congenital upper eyelid retraction, as is in Graves' disease, and that it is preferable because of being an easy technique to learn and apply.

REFERENCES

1. Bartley GB. The differential diagnosis and classification of eyelid retraction. Trans Am Ophthalmol Soc 1995;93:371-87; discussion 387-9.
2. Hintschich C, Haritoglou C. Full thickness eyelid transsection (blepharotomy) for upper eyelid lengthening in lid retraction associated with Graves' disease. Br J Ophthalmol 2005;89(4): 413-6.
3. Putterman AM. Surgical treatment of thyroid-related upper eyelid retraction. Graded Müller's muscle excision and levator recession. Ophthalmology 1981;88(6): 507-12.
4. Mourits MP, Koornneef L. Lid lengthening by sclera interposition for eyelid retraction in Graves' ophthalmopathy. Br J Ophthalmol 1991;75(6):344-7.
5. Woog JJ, Hartstein ME, Hoenig J. Adjustable suture technique for levator recession. Arch Ophthalmol 1996;114(5):620-4.
6. Acaroğlu G, Göka Ş, Zilelioğlu O, Fırat E. [Levator aponeurosis and mueller's muscle recession in thyroid related upper eyelid retraction]. Turkiye Klinikleri J Ophthalmol 2004; 13(2):82-7.
7. Stout AU, Borchert M. Etiology of eyelid retraction in children: a retrospective study. J Pediatr Ophthalmol Strabismus 1993;30(2): 96-9.
8. Collin JR, Allen L, Castronuovo S. Congenital eyelid retraction. Br J Ophthalmol 1990;74(9): 542-4.
9. Elner VM, Hassan AS, Frueh BR. Graded full-thickness anterior blepharotomy for upper eyelid retraction. Arch Ophthalmol 2004;122 (1):55-60.