

Inverse Implantation and Rapid Postoperative Necrosis of Conjunctival Autograft in Pterygium Surgery

Pterijum Cerrahisinde Konjonktival Ototogreft Ters İmplantasyonu ve Ameliyat Sonrası Hızlı Nekrozu

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Summary

A 72 year-old female underwent surgery for nasal pterygium in the right eye. Conjunctival autograft with Mytomycine-C was performed. In the postoperative period slit lamp examination revealed a pale and avascular appearance of the conjunctival graft. On postoperative fifth day inverse graft implantation and graft necrosis was diagnosed. The graft was removed. We herein discuss the reason and possible preventive measures of this unusual outcome. (*Turk J Ophthalmol* 2012; 42: 298-9)

Key Words: Ototogreft ters dönmesi, pterijum cerrahisi

Özet

Yetmiş iki yaşında kadın hastaya sağ göz nazal pterijum nedeniyle mitomisin C ile konjonktival otogreft cerrahisi uygulandı. Ameliyat sonrası dönemde yarıklı lamba muayenesi ile konjonktival otogreftin soluk ve avasküler olduğu görüldü. Ameliyat sonrası beşinci günde greftin ters olarak implante edildiği, nekroze olduğu tespit edildi ve greft alındı. Biz burada bu nadir komplikasyonun neden ve olası engelleyici önlemlerini tartışmaktayız. (*Turk J Ophthalmol* 2012; 42: 298-9)

Anahtar Kelimeler: Autograft inversion, pterygium surgery

Introduction

Pterygium excision with conjunctival autograft is a widely used procedure for the treatment of primary and recurrent pterygium.¹ This seemingly easy surgery is open to various complications such as wound dehiscence, Tenon granuloma, conjunctival inclusion cyst, graft edema, dellen, and more rarely graft necrosis.² We herein report a rapid necrosis of conjunctival autograft due to inverse implantation though the intraoperative measures were taken.

Case Report

A 72 year-old female underwent surgery for nasal pterygium in the right eye. The area of surgery was sterilized with povidone iodine 10% solution and by surgical draping. Surgical anesthesia was performed with topical 0.5% proparacaine HCL (Alcaine, Alcon, Switzerland) and subconjunctival 40 mg/2ml lidocaine

(Jetokain, Adeka, Turkey). Pterygium body and underlying tenon were excised with Westcott scissors. The head of the pterygium with its cap was then dissected off the cornea with blunt dissection. Minimal cauterization was applied for hemostasis. 0.2 mg/mL Mitomycin C was applied to the scleral bed with a cellulose sponge for 2 minutes. Sclera and the surgically excised area were irrigated with copious amount of balanced salt solution. Scar tissue on the cornea was polished. Conjunctival defect was measured with a caliper and the superior conjunctiva was delineated with a surgical pen to create a graft equal in size to the excised area.

Conjunctival graft was prepared with Westcott scissors and tying forceps, avoiding the Tenon capsule. Epithelial surface of the graft was marked with a surgical pen and excised with a Vannas' scissors along the limbal edge. Seconds after the graft was freed from the limbus the graft was stuck with a sponge because of an uncontrolled maneuver and the orientation of the graft was lost. The graft subsequently moved to the bare sclera and attached

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to the conjunctiva with interrupted 8-0 Vicryl sutures. The eye was covered with an eye pad after administration of topical antibiotic ointment. Patient was treated with fucidic acid ointment b.i.d. and topical fluorometholone q.i.d. for 10 days.

On the first postoperative day slit lamp examination revealed a pale and avascular graft with a normal underlying sclera. The appearance of the graft did not change for the following 5 days (Figure 1). On postoperative fifth day a diagnosis of inverse graft implantation and necrosis of the graft tissue was made. The graft was removed with a jewelers forceps at the slit lamp. The graft was not attached to the underlying scleral bed and removed easily. Postoperative first month visit was unremarkable and there were no signs of recurrence of the pterygium tissue.

Discussion

Autograft necrosis after pterygium excision may be related to excessive use of cautery, radiation and Mitomycin C or immunologic shift as seen in patients with scleral inflammation.³ In all these scenarios accompanying scleral necrosis or melting is invariably present. In our patient scleral tissue was healthy underneath the conjunctival graft.

Graft inversion is a rare complication of pterygium surgery. It is followed invariably by necrosis and sloughing of the graft, which manifests on the first postoperative day. Some researchers

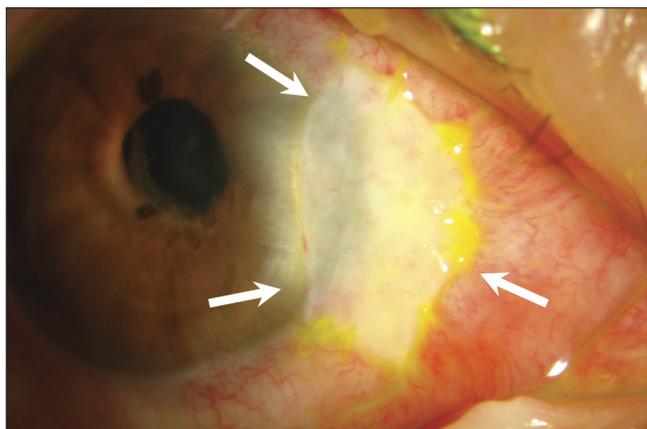


Figure 1. Pale and avascular appearance of the conjunctival graft (white arrows) on postoperative day 5

suggest putting extra marking on the surface of the graft to prevent this complication.⁴ During preparation of conjunctival autograft in our patient close attention was paid to involve the marked area with correct alignment. However, when the graft was free on the corneal surface the orientation was lost because of an uncontrolled maneuver. The inversion of the conjunctival graft was overlooked in the advanced stage of surgery.

It may be argued that the graft can be surgically reoriented if the diagnosis of inverse implantation can be made in the first 48 hours. This approach has been reported to be successful by some of the surgeons.⁴ In our case, we preferred to remove the graft because of the suspicion of the viability of the conjunctiva. As we had to remove the graft, the surgery can be accepted as a bare scleral pterygium excision, which has significantly higher rate of postoperative pterygium recurrence. Because of this reason the inverse implantation of the graft and subsequent graft necrosis can be accepted as a complication that increases the rate of recurrence in pterygium surgery.

There are additional measures that can be taken during the surgery, which may prevent the occurrence of this rare complication. The corners of the graft can be sutured or epithelial surface can be cauterized before the excision of the graft was completed. In our patient, we preferred to mark the epithelial surface with a surgical pen, which seemed enough to prevent this outcome.

We herein want to remind a rarely documented and probably more common than that reported complication of pterygium surgery with conjunctival autograft. Careful conjunctival graft preparation and additional concentration in the orientation of the graft could prevent this unusual complication.

References

1. Allan BDS, Short P, Crawford GJ et al. Pterygium excision with conjunctival autografting: an effective and safe technique. *Br J Ophthalmol.* 1993;77:698-702.
2. Starck T, Kenyon KR, Serrano F. Conjunctival autograft for primary and recurrent pterygia; surgical technique and problem management. *Cornea.* 1991;10:196-202.
3. Jain V, Shome D, Natarajan S, Narverkar R. Surgically induced necrotizing scleritis after pterygium surgery with conjunctival autograft. *Cornea.* 2008;27:720-1.
4. Figueira EC, Coroneo MT, Francis IC. Preventing conjunctival autograft inversion in pterygium surgery. *Br J Ophthalmol.* 2007;91:83-4.