

Long-Term Prognosis of a New and Simple Surgical Technique for Small Corneoscleral Perforans, Using Autogenous Scleral Grafting into a Corneoscleral Tunnel

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ABSTRACT. Background: Covering of defects is the only suitable reconstructive method for corneoscleral perforans when the defects are large, but if a defect is small in size, the graft might be too large, and might require suturing to adjacent tissues. However, for small defects, a flap can be grafted into the scleral tunnel with no exposure and steadier fixation.

Case : A 70-year-old man had suffered injury to his right eye caused by the nozzle of an air hose. Hyphema, lens luxation, vitreous hemorrhage, and retinal detachment were recognized. As treatment, an intracapsular cataract extraction (ICCE) was done and a vitrectomy was performed twice. Uveal incarceration into the corneosclera under the bulbar conjunctiva was recognized two months after final surgery, and the corneosclera at the site of the incarceration became thinner afterward. Seven years after treatment, the patient complained of ocular pain.

Observations : The flap remained alive within few or no vascular tissues during the seven years after surgery. There were no problem such as melt, infection, or pain.

Conclusions : This new surgical technique may be very effective and minimally invasive for small corneoscleral perforans.

Key words ① corneoscleral perforans ② autogenous scleral grafting
③ scleral tunnel ④ long-term prognosis ⑤ surgical technique

Corneoscleral defects involving scleromalacia perforans occur after various surgical operations and other reasons¹⁾. The graft materials for reconstruction are autogenous mucous membrane, auricular cartilage, homologous sclera, fascia lata, autogenous periosteum, and dermal grafts²⁾. These grafts cover defects, and except for dermal grafts, are often covered by conjunctiva^{1)~5)}. Covering of defects is the only suitable reconstructive method when defects are large, but if the size of the defect is small, the graft might be too large, and might require suturing to adjacent tissues. We report the long-term prognosis of a patient with a small corneoscleral defect who was treated with a new and simple surgical technique. Traditional surgical methods were considered excessive for a defect of this small size.

CASE REPORT

In 1987, a 70-year-old man suffered injury to his right eye caused by the nozzle of an air hose. Hyphema, lens luxation, and vitreous hemorrhage were recognized. As treatment, an intracapsular cataract extraction (ICCE) was performed at an emergency hospital, and 12 days later a vitrectomy was done at a university hospital. However, because there was no reattachment of a retinal detachment, which was found during that vitrectomy, a second vitrectomy was performed and an encircling was done nine days after the first vitrectomy. An incision of the ICCE was performed from three o'clock to nine o'clock on the lower ocular half because that part of the ciliary zonule was intact. Although uveal incarceration into the corneosclera under the bulbar conjunctiva at five o'clock was recognized two months after final surgery, no complaint was made then. However, afterward, the corneosclera became thinner at the site of incarceration, and seven years after treatment, the patient complained of ocular pain (Fig. 1).

Autogenous scleral grafting into the corneoscleral tunnel was performed in 1998, because the sclera surrounding the perforans seemed to be thick enough and ocular tension was normal. A scleral flap 3 mm wide, 4 mm long, and one-third of the sclera thick was cut off at a site 3 to 6 mm posterior to the limbus at one o'clock. That scleral flap was implanted into a corneoscleral tunnel incision 5.5 mm wide, 4 mm long, and at half-depth, which was made from 2 mm posterior to limbus toward the cornea and at the site where the corneo-scleral perforans was involved. A scleral incision was sutured with one needle with 10-0 Vycelyl[®], and the conjunctiva was sutured so that it covered the incision site. We have followed the patient until 2005. Although seven years had passed since the surgery was performed, no problem occurred. The scleral flap had

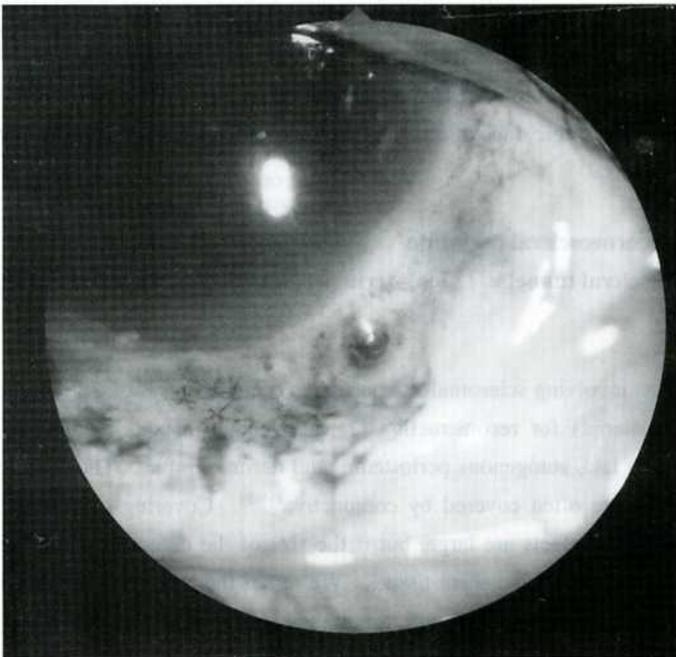


Fig. 1. Before treatment for corneoscleral perforans
A dark uvea, shaped like a small dome, is seen near the limbus through the conjunctiva.

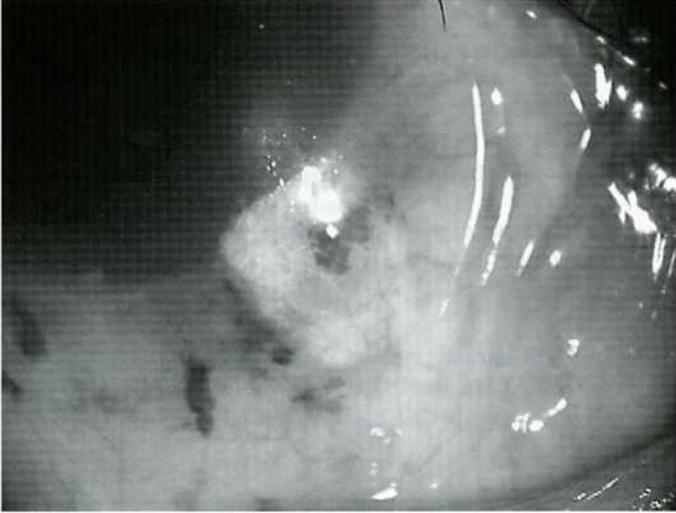


Fig. 2. After treatment for corneoscleral perforans

A square scleral flap is seen through the translucent cornea and thin sclera near the limbus. The small dark part of the conjunctiva at the center of the graft is residual uveal pigment, which was left on the conjunctiva when it was detached from the uvea.

no melt, and the patient's complaints disappeared (Fig. 2).

COMMENTS

The patient's corneoscleral perforans occurred at the site where the ICCE incision was performed. Since such perforans are rare, appropriate treatment has not always been established. Autogenous scleral grafting into a corneoscleral tunnel for corneoscleral perforans was chosen as the particular treatment for this patient and it proved successful. This surgical method is simple, easy, and safe, and it may be effective as one treatment for small corneoscleral defects.

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