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Editorials

An alternative approach to corneoscleral repair

The management of destructive diseases of the eye wall is as old as ophthalmology. Indeed it was an epidemic of destructive corneal disease, in the form of Egyptian ophthalmia, which overwhelmed the teaching hospitals towards the end of the eighteenth century and forced the creation of separate eye hospitals and the establishment of ophthalmology as the first of the surgical specialties. At the same time, Egyptian ophthalmia led to the first proposal for corneal transplantation as we know it.¹ After a century of sporadic experimentation, the first successful corneal allograft was performed more than 50 years before transplantation became a clinical reality in any other surgical discipline.

Although corneal transplantation, in one form or another, is the dominant surgical approach, the effectiveness of the procedure in the treatment of destructive corneoscleral disease is limited. Susceptibility to allograft rejection and the difficulty of achieving a stable epithelial surface are major problems. Even if the integrity of the globe is maintained as a consequence of a corneal graft, the visual outcome is almost invariably poor. Preservation of the globe by a rejected corneal graft is a minor consolation. Any subsequent graft performed with the aim of achieving a better visual result is likely to reject. Second or subsequent grafts have a higher rejection rate.²

Even if the surgical results were better, another limitation of corneal transplantation as a treatment for destructive corneal disease relates to the need for a supply of donors. Destructive corneal disease tends to be more of a problem in communities where the donor supply is particularly limited. In the rural regions of the developing world destructive corneal infections are common, and the supply of donors can be almost non-existent.³

Following surgical repair of a corneoscleral defect, it can be difficult to achieve a stable epithelial surface. The conventional approach is to use pedicled conjunctival grafts, directly over a defect or over a defect repaired with a free graft of cornea or sclera. A shortage of appropriate conjunctiva may preclude this approach.

As an alternative to the conventional approach, the use of split skin grafts, as described by Mauriello and Pokorny in this issue, is important. The technique is capable of achieving tectonic repair and epithelialisation, and is likely to be useful in the management of difficult cases not otherwise amenable to surgical repair.

Hopefully, the publication of this report will encourage others to report similar procedures. It is likely that resourceful surgeons working in situations where corneal transplantation is difficult or impossible have developed similar approaches using autologous tissue to cope with this common clinical problem. The report may also encourage research aimed at expanding the options available for repairing the ravages of inflammatory eye disease.

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1 Darwin E. *Zoonomia or the laws of organic life*. Vol 2. London: J Johnson, 1796.

2 Williams KA, Roder D, Esterman A, Muehlberg SM, Coster DJ. Factors predictive of corneal graft survival. Report from the Australian Corneal Graft Registry. *Ophthalmology* 1992; 99: 403-14.

3 Coster DJ, Williams KA. Donor cornea procurement: some problems in Asia. *Asia-Pacific J Ophthalmol* 1992; 4: 7-12.