

**Figure 1** (a) Severe corneal haze of the patient 9 months after wedge resection. (b) The same cornea 18 months after a single application of MMC to the scarred area.

The cornea developed severe central haze with decrease of vision to 2.0 logMAR with a refraction of  $-1.0 \approx -2.5/180$  6 months later (Figure 1a).

MMC 0.02% was applied therefore as a therapeutic option for 45 s on a sponge after epithelial removal.<sup>2</sup> Haze disappeared 4 months later and UDVA increased to 0.2 logMAR. The cornea remained clear for the follow-up period of 21 months (Figure 1b).

#### Comments

Haze formation is possible in the central cornea after incisional surgery in eyes with a history of PRK, even if the cornea was clear.

However, lamellar transplantation has been described as therapeutic option for visual recovery in such cases,<sup>3</sup> but this case shows that a single topical application of MMC 0.02% for 45 s is a suitable treatment option and the cornea remained clear for the entire postoperative follow-up period of 21 months.

Incisional surgery is a risk factor for eyes with a history of PRK, but MMC 0.02% application is a useful therapeutic option for the removal of corneal haze.

#### **Conflict of interest**

The authors declare no conflict of interest.

#### References

- Kolahdouz-Isfahani AH, Wu FM, Salz JJ. Refractive keratotomy after photorefractive keratectomy. J Refract Surg 1999; 15(1): 53–57.
- 2 Majmudar PA, Forstot SL, Dennis RF, Nirankari VS, Damiano RE, Brenart R *et al.* Topical mitomycin-C for subepithelial fibrosis after refractive corneal surgery. *Ophthalmology* 2000; **107**(1): 89–94.
- 3 Shoji N, Hayashi E, Shimizu K, Uga S, Sugita J. Central corneal haze increased by radial keratotomy following photorefractive keratectomy. *J Refract Surg* 2003; **19**(5): 560–565.

E Maria Pöschl, Y El-Shabrawi and N Ardjomand

Department of Ophthalmology, Medical University Graz, Graz, Austria E-mail: navid@ardjomand.at

*Eye* (2013) **27**, 679–680; doi:10.1038/eye.2013.27; published online 1 March 2013

#### Sir,

# Intra-lesional interferon injection for recurrent conjunctival MALT lymphoma

Conjunctival mucosa-associated lymphoid tissue (MALT) lymphomas are localized low-grade extra-nodal tumours that are managed with radiotherapy, cryotherapy, surgical excision, or even observation.

Intra-lesional interferon injection for conjunctival lymphomas was first cited as early as 1996 by Cellini *et al*<sub>i</sub><sup>,1</sup> its successful use has been reported since then.<sup>2,3</sup> We report a case where its use has been invaluable in a patient with recurrent conjunctival MALT lymphoma following external beam radiation.

#### Case report

A 55-year-old woman presented with a 2-week history of red watery right eye and swelling of her right lower lid. On examination, she had a salmon pink mass in the right inferior bulbar conjunctiva (Figure 1a). The rest of the ocular examination was normal. Conjunctival biopsy confirmed this to be an extra-nodal marginal-zone MALTtype lymphoma. The patient was treated with external beam radiation (24 Gy in 12 fractions) to the right inferior conjunctiva with complete regression of the lymphoma.

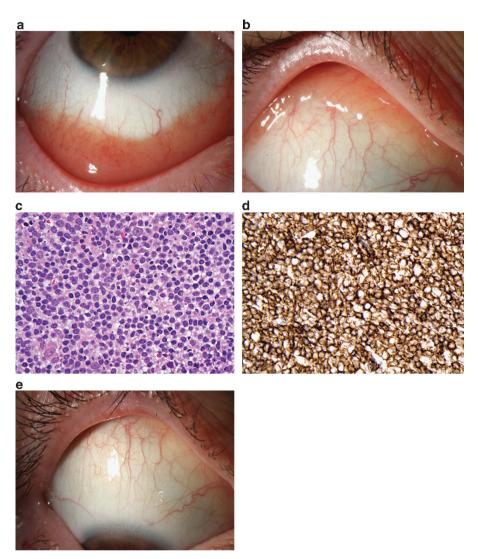
At 10 months post radiotherapy, she was noted to have a similar pink lesion in the right superior bulbar conjunctiva (Figure 1b). A biopsy confirmed recurrent MALT lymphoma (Figure 1c).

Owing to recent external beam radiotherapy it was felt inappropriate to re-treat her with the same modality and she was treated with intra-lesional interferon injection.

She received a 4-week course of 3 times a week intralesional injections of 1.5 mega-units in 0.25 ml of Interferon  $\alpha 2A$ , with complete regression of the lesion.

She remains disease free at 10 months follow-up.

680



**Figure 1** (a) Digital photograph of the right inferior conjunctival lesion at presentation. (b) Digital photograph of the right superior conjunctival lesion 10 months post external beam radiation. (c) Haematoxylin and eosin-stained section of the recurrent lesion showing diffusely packed atypical lymphoid cells. (d) Immunohistochemistry with CD20 showing membranous staining of the lymphoid cells indicative of a B-cell lymphoma. (e) Digital photograph of the right conjunctival lesion 1 month post interferon injection demonstrating complete regression of the lymphoma.

#### Comment

Radiotherapy has been widely used as a treatment for MALT lymphoma with successful results, but ocular complications such as corneal ulcers, radiation-induced cataract, ocular surface disorders,<sup>4</sup> and recurrence have been reported.

Intra-lesional interferon has been successfully used for treatment of conjunctival MALT lymphoma. A recurrence rate of 15% on a long-term follow-up (65 months) has been reported.<sup>5</sup>

We believe this is the first case reported where intralesional Interferon  $\alpha 2A$  was used in recurrent conjunctival MALT lymphoma after external beam radiation, and we recommend considering it in similar cases.

## **Conflict of interest**

The authors declare no conflict of interest.

#### References

- 1 Cellini M, Possati GL, Puddu P, Caramazza R. Interferon alpha in the therapy of conjunctival lymphoma in an HIV + patient. *Eur J Ophthalmol* 1996; **6**(4): 475–477.
- 2 Blasi MA, Gherlinzoni F, Calvisi G, Sasso P, Tani M, Cellini M *et al.* Local chemotherapy with interferonalpha for conjunctival mucosa-associated lymphoid tissue lymphoma: a preliminary report. *Ophthalmology* 2001; **108**(3): 559–562.
- 3 Lucas RS, Mortimore R, Sullivan TJ, Waldie M. Interferon treatment of childhood conjunctival lymphoma. Br J Ophthalmol 2003; 87: 1191.
- 4 Bessel EM, Henk JM, Whitelocke JF, Wright EJ. Ocular morbidity after radiotherapy of orbital and conjunctival lymphoma. *Eye* 1987; **1**: 90–96.

- npg 682
- 5 Blasi MA, Tiberti AC, Valente P, Laguardia M, Sammarco MG, Balestrazzi A *et al.* Intra-lesional interferon-α for conjunctival mucosa-associated lymphoid tissue lymphoma: long-term results. *Ophthalmology* 2012; **119**(3): 494–500.

M Zayed<sup>1</sup>, K Sears<sup>1</sup>, SM Salvi<sup>1</sup>, PA Rundle<sup>1</sup>, IG Rennie<sup>2</sup> and HS Mudhar<sup>3</sup>

<sup>1</sup>Ophthalmology Department, Royal Hallamshire Hospital, Sheffield, UK <sup>2</sup>Academic Unit of Ophthalmology and Orthoptics, University of Sheffield, Sheffield, UK <sup>3</sup>National Specialist Ophthalmic Pathology Service (NSOPS), Histopathology Department, Royal Hallamshire Hospital, Sheffield, UK E-mail: Mohammed.zayed@nhs.net

*Eye* (2013) **27**, 680–682; doi:10.1038/eye.2013.46; published online 5 April 2013

#### Sir,

Tutoplast pericardium patch graft for scleral thinning following strabismus surgery

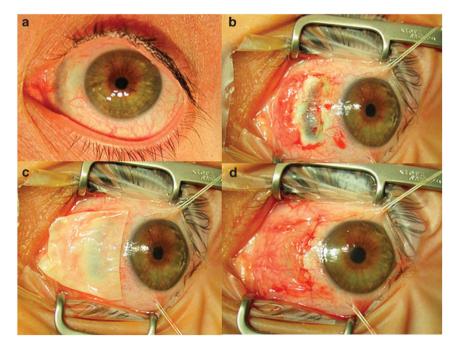
The Tutoplast process is a scientific method of virally inactivating, preserving, and sterilising human tissue, which can be safely used as an allograft. The Tutoplast pericardium patch graft (Innovative Ophthalmic Products, Inc., Costa Mesa, CA, USA), supplied by IOP Ophthalmics in the United Kingdom, is comprised of low-profile collagen with a multi-directional matrix for superior surgical handling and suture utility. The literature describes successful Tutoplast pericardium utilisation in the management of Peyronie's disease,<sup>1</sup> as a patch graft in glaucoma, and corneal surgery,<sup>2,3</sup> to cover exposed scleral buckles<sup>4</sup> and oculoplastic surgery.<sup>5</sup> We report the novel use of this material for cosmetically unacceptable scleral translucency following strabismus surgery.

### Case report

A 37-year-old male attended the ophthalmology department seeking treatment for a cosmetically, unsightly dark area in the medial aspect of the left eye, resulting from previous medial rectus recession surgery. The dark area developed during the year following the squint operation. There was no history of post-operative scleritis. Examination showed a dark scleral area of  $3 \text{ mm} \times 11 \text{ mm}$ , located 6 mm nasally from the limbus (Figure 1a).

The patient was offered a surgical procedure to cover the area of dark sclera with a Tutoplast pericardium graft. A localised peritomy was performed to expose the area of interest (Figure 1b). A Tutoplast pericardial graft, which is thinner than sclera but of similar colour and opacity, was placed over this area and fixed to the sclera with 8/0 Vicryl sutures (Figure 1c). The conjunctiva was closed with interrupted 7/0 Vicryl sutures (Figure 1d).

At 2-week follow-up, the patient reported no pain or significant discomfort, and was satisfied with the cosmetic result of the surgery. Objective examination demonstrated a minimally visible area of previously overtly dark sclera and mild conjunctival injection. This excellent cosmesis was retained at 6 months (Figure 2b).



**Figure 1** Photographs of the left eye of the patient prior to the scleral patch graft (a), intraoperative images of the exposed area of the dark sclera (b), placement of the Tutoplast pericardium over the unsightly dark sclera (c), and after the closure of conjunctival wound (d).