

conjunctival ischaemia. Another possibility could be a localized toxic reaction to the triamcinolone acetonide. At 3 months subsequent to the injection there appears to be superior reperfusion over this area, but the vessels appear larger than the surrounding normal conjunctival vasculature. No related complications have arisen from this.

Acknowledgements

Proprietary interest/Financial interest: None.

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Eye (2006) **20**, 388–389. doi:10.1038/sj.eye.6701860;
published online 1 April 2005

Sir,
Therapeutic corneal tattoo following peripheral iridotomy complication

Occludable narrow angles predispose to angle closure glaucoma and merit prophylactic peripheral iridotomy (PI). We highlight the prevention of glare by careful placement of PIs and secondly, an unreported

therapeutic indication of corneal tattooing for relief of such symptoms in patients with phakic narrow angle glaucoma (NAG).

Case report

An asymptomatic 59-year-old lady, diagnosed with chronic NAG, underwent bilateral YAG laser PI at her local ophthalmic department. She developed troublesome glare from each eye immediately afterwards. Her two sisters and mother were also diagnosed with chronic NAG. After 10 months her symptoms persisted and she was referred for a second opinion.

Her visual acuity was 6/6 bilaterally. She had clear corneas and lenses bilaterally and no glaucomflecken. The brown irides showed no spiraling but had large laser iridotomies at 10 o'clock in the right eye and 2 o'clock in the left. Intraocular pressure was 14 mmHg in both eyes and both optic discs were healthy with a cup disc ratio of 0.2. Gonioscopy showed bilateral open inferior quadrants and nasal appositional closure with evidence of past closure in superior quadrant: sawtooth peripheral anterior synaechiae to midpoint of superior angle trabecular meshwork (TM) and blotchy pigment on the TM. The PIs were placed exactly where the upper lid margin joins the tear meniscus (Figure 1a and b).

She could not tolerate peripheral opaque contact lenses, which provided complete relief of symptoms.¹ She underwent corneal tattooing, under topical anaesthesia. Filter paper, soaked with sterile platinum chloride solution, was inserted into a 2 mm corneal stromal pocket, created with a keratome, anterior to the PI. The reducing agent, hydrazine hydrate solution, was then slowly added beneath the filter paper. Excess solution was soaked up by limbal placed dry swabs to minimise conjunctival staining (Figure 1c and d). Symptomatic relief from glare was achieved, without ocular inflammation or corneal erosion symptoms at 20 months follow up.

Comment

Glare occurred from the acquired peripheral iris defects, particularly, at the level of the upper lid margin–tear film interface.² Gonioscopic findings suggested that she had occludable angles, which did merit bilateral prophylactic laser PIs. She declined bilateral upper eyelid lowering, for cosmetic reasons. Intraocular iris suturing to close the PIs was an option but ran the risk of hyphaema, uveitis, and an increased risk of the development of glaucoma and cataract. Therefore, she was offered corneal tattooing.

A corneal stromal pocket (Figure 1c), by keratome, minimised reported complications of corneal tattooing

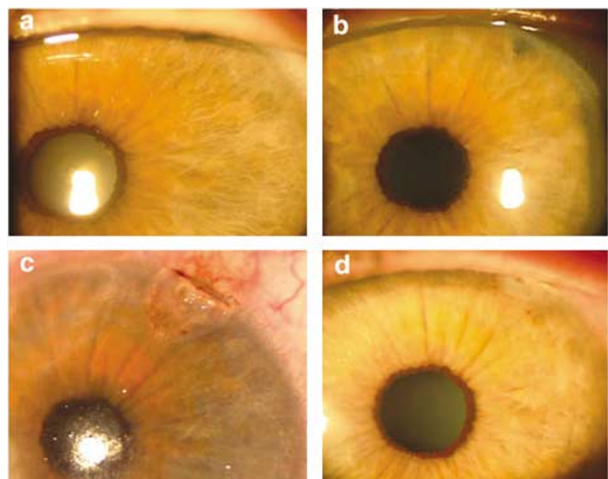


Figure 1 (a) Resting position tear film meniscus creating prismatic effect widening left peripheral iridotomy. (b) Elevated left upper eyelid revealing true sized peripheral iridotomy. (c) Peroperative two-step limbal corneal stromal pocket with tattoo pigment. (d) Corneal stromal pigment and scar obscuring peripheral iridotomy at 20 months.

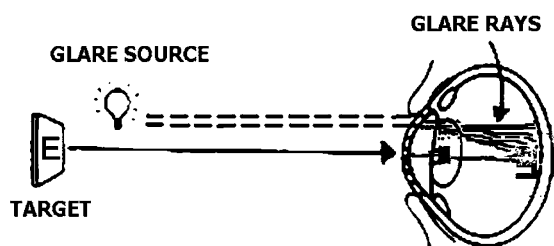


Figure 2 Peripheral iridotomy allows contrast lowering effect by stray light at retinal surface to obscure the macular image 'E'.

such as recurrent or persistent epithelial defects and corneal perforation.³ Some authors advocate mixing coloured pigments to match the iris colour. Corneal tattooing, using copper sulphate, has been used for cosmesis since the second century by Galen. Therapeutic corneal tattooing to reduce glare from corneal scars was introduced in the latter part of 19th century. Indications include iris defects,⁴ corneal disfiguring scars,^{5,6} cosmetic contact lens intolerance,¹ surgery not appropriate (no functional improvement, risk of phthisis, or secondary glaucoma), and when patients do not wish repeated surgery or enucleation.

Glare can be defined as a contrast lowering effect of stray light on a visual scene. Patients may not convey glare symptoms clearly and this complaint can often be ignored. Our patient was particularly troubled by glare symptoms and we suspect even more so due to the lid margin-tear film meniscus. The latter causes a prismatic effect to refract more rays light towards and through the PI to enter the eye (Figure 1a and b.). This in turn would

cause more prominent diffraction rings, interference fringes, and ultimately glare (Figure 2).

Laser PIs should not be placed in the interpalpebral aperture and especially not at the 2 or 10 o'clock positions where the lid margin-tear film meniscus is usually present. Optimum placement of PI's, usually 150–200 μm in diameter,⁷ should be as peripheral as possible and within one clock hour of 12 o'clock so that the defect is completely covered by the upper lid. If glare symptoms occur following PI then a minimally invasive procedure such as corneal tattooing may be appropriate.

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Eye (2006) **20**, 389–390. doi:10.1038/sj.eye.6701861;
published online 1 April 2005