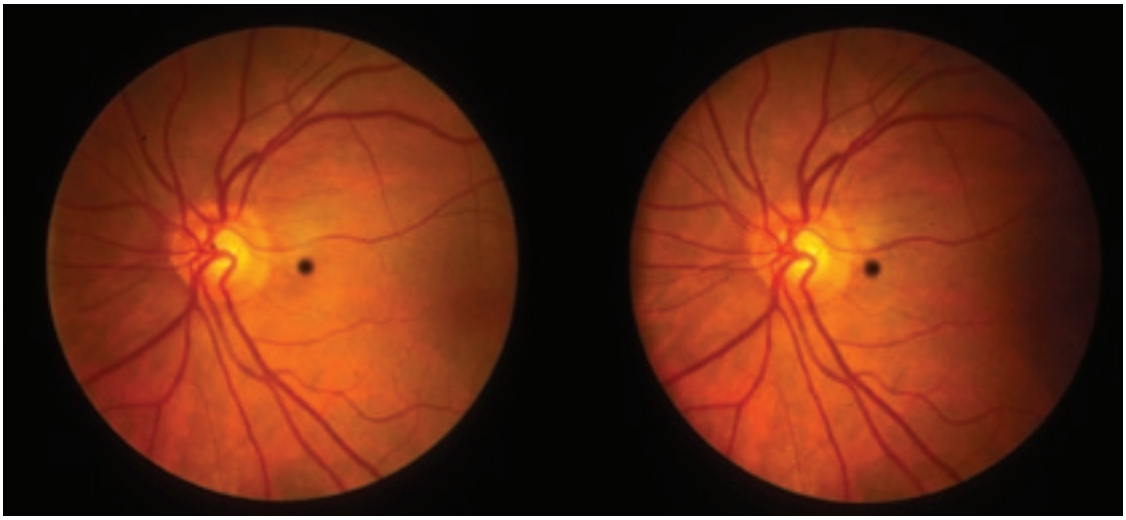
# Steroid-induced glaucoma



Stereo image of moderate optic disc changes in the left eye of a 65-year-old man with steroid-induced glaucoma. There is marked thinning of the superior neuroretinal rim. This image may be viewed stereoscopically. Ensure the image is horizontal and use a 10 diopter prism horizontally to aid fusion (either base-in or base-out, whichever is easier). The central black dot and area of optic disc cupping will appear behind the retinal plane

## DESCRIPTION

Steroids, whether administered topically or systemically, can cause a significant elevation of intraocular pressure (IOP).

This is more likely with topical steroids but patients who use steroids in the form of an inhaled medication or dermal creams are at risk. Steroid responders or patients more prone to this outcome include those who already have primary open-angle glaucoma, those who have a history of glaucoma in first degree relatives, high myopes, diabetics and those who are black.

The increase in IOP is due to a reduced outflow facility of aqueous.

## SYMPTOMS

The patient's symptoms usually relate to the underlying disease for which steroids are being used for treatment such as uveitis.

If glaucoma does become established and goes unchecked, the patient may complain of blurred vision and the effects of visual field loss late in the disease process.

## SIGNS

The cardinal sign in this condition is elevated IOP occurring about two to six weeks after the commencement of topical steroid treatment.

In the majority of patients who respond in this way, IOP increases by up to 15mmHg. A minority show elevations above this level. IOP may rise more rapidly in patients who already have primary open-angle glaucoma and in some patients commencing systemic steroids. Where the increase in IOP is prolonged, signs of glaucomatous optic neuropathy may ensue, such as optic disc cupping and visual field loss.

Provided no damage has occurred to the aqueous outflow facility, IOP should return to pre-treatment levels within about one month following the withdrawal of steroids.

## PREVALENCE

Approximately 40 per cent of the population will show an elevation in IOP after two to six weeks of topical steroid use.

## DIFFERENTIAL DIAGNOSIS

Open-angle glaucoma from inflammatory eye disease.

## MANAGEMENT

### Ocular tests

IOP should be carefully and regularly monitored in any patient receiving topical or systemic steroids, and this should continue for one or two months after the cessation of steroid use, by which time IOP should have returned to pre-treatment levels.

### Topical medication

If the patient is taking steroids, for example in acute iritis, it may be difficult to establish whether the elevation in IOP is due to the inflammatory disease or the steroids.

Maintaining or increasing the level of steroid medication together with the addition of, for example, a topical beta-blocker could be considered. Other options from a general perspective include reducing the steroid dosage, strength and the length of time over which it is administered, using a less potent steroid such as fluorometholone (FML), rather than a high penetration alternative such as dexamethasone or prednisolone, prescribing instead a non-steroidal anti-inflammatory medication (NSAID) or discontinuing steroids altogether. If the latter is contemplated, there should be a tapered rather than an abrupt withdrawal.

### Incisional surgery

In patients where IOP proves to be refractory to medical management, surgery, such as a filtration procedure, may be contemplated.

The full series of these articles is available in the book *Posterior Eye Disease and Glaucoma A-Z* by Bruce AS, O'Day J, McKay D and Swann P. £39.99. For further information click on the Bookstore at **opticianonline.net**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