CASE REPORT

Unilateral orbital fat change

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SUMMARY

A man in his 60s suffering from open-angle glaucoma attended a routine glaucoma follow-up complaining that his left eye has changed in appearance. On examination, there was extensive loss of orbital fat giving the appearance of a sunken in globe. A diagnosis of prostaglandin-associated periorbitopathy was made as the man had been taking a prostaglandin analogue for his glaucoma for over 4 years in his left eye only.

BACKGROUND

This is an innocuous side effect of a common topical glaucoma eye-drops causing a unilateral orbital change. The orbital change could be mistaken for ipsilateral ptosis, enophthalmos or a contralateral exophthalmos, all of which have more sinister causes and may require surgical intervention. Investigating these causes would expose the patient to a gamut of unnecessary tests.

By highlighting this side effect, it is hoped both ophthalmologists and non-ophthalmologists are reminded to take a thorough drug history in cases of unilateral orbital change.

CASE PRESENTATION

A 65-year-old man attended his routine glaucoma follow-up reporting a change in the appearance of his left eye. He was asymptomatic and did not complain of any double vision, orbital pain, headaches or any systemic changes. On examination of the left orbit, there was deepening of the upper lid sulcus, extensive loss of orbital fat, mild enophthalmos and increased prominence of lid vessels (figure 1). Eye movements and pupil examination was normal. Slit lamp examination was unremarkable for the patient.

Figure 1 Photograph showing loss of orbital fat around the left globe with associated eyelid changes.

The patient had been diagnosed with primary open-angle glaucoma in his left eye only; 4 years previously. On presentation, his visual field in his left eye showed extensive inferior hemispheric loss (figure 2) and his presenting intraocular pressure (IOP) was 23 mm Hg (normal IOP is roughly 21 mm Hg). His left eye vision was 6/12 with glasses using a Snellen chart. The right eye had a vision of 6/5 aided Snellen, an IOP of 13 mm Hg and a full visual field.

Bimatoprost, a prostaglandin analogue was commenced once a day for his left eye 4 years previously. His pressure had now fallen to 18 mm Hg and the visual field remained stable throughout.

DIFFERENTIAL DIAGNOSIS

The most likely diagnosis in this asymptomatic man was prostaglandin-associated periorbitopathy.

The appearance shown above, however, may have led clinicians to believe there was either an ipsilateral enophthalmos or contralateral exophthalmos for which both have numerous causes of varying severity. Examples of conditions causing contralateral exophthalmos include thyroid eye disease, orbital cellulitis, pseudotumour, retrobulbar haemorrhage and vascular malformations. Causes of ipsilateral enophthalmos are orbital fractures, age-related involutional change, scleroderma and hemifacial atrophy.

OUTCOME AND FOLLOW-UP

A diagnosis of prostaglandin-associated periorbitopathy was made, which was in keeping with the man's history and lack of associated findings on examination. The diagnosis and findings were explained to the patient. The patient had not been too affected by the appearance change and declined an offer to change topical treatment. He remains on bimatoprost once a day in the left eye only. He will be followed up 6 monthly for his glaucoma.

DISCUSSION

Prostaglandin-associated periorbitopathy is a term given to describe the changes in the eyelid and orbit that accompany the administration of topical prostaglandin analogue eye-drops. The changes include an upper lid ptosis, deepening of upper lid sulcus, involution of dermatochalasis, periorbital fat atrophy, mild enophthalmos, inferior scleral show, increased prominence of lid vessels and tight eyelids.

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Reminder of important clinical lesson

Figure 2 Humphrey visual field (24-2) of both eyes. The left eye shows loss of inferior hemifield.

Learning points

- Prostaglandin-associated periorbitopathy is a very common side effect.
- It should be a differential of orbital appearance change in anyone taking a topical prostaglandin analogue.
- A thorough history and examination are required in any patient with unilateral orbital change.

The condition was first described in 2004¹ and there have been numerous case reports since.² It can be associated with any topical prostaglandin analogue use usually within 1–2 months and once clinicians are aware of signs, it can be spotted in all patients.¹

Diagnosis is based purely on history and examination, there are no laboratory tests and imaging is not required unless to rule out another pathology. There is no definitive treatment; however, stopping the medication can lead to some reversal. The mechanism proposed from biopsies taken suggests that there is adipocyte atrophy.³

Although a common side effect in patients taking a prostaglandin analogue, non-ophthalmology clinicians may not

encounter many of these patients in routine practice and should therefore be aware of this possible differential.

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