

Figure 1 Mild grade R1 background retinopathy



Figure 2

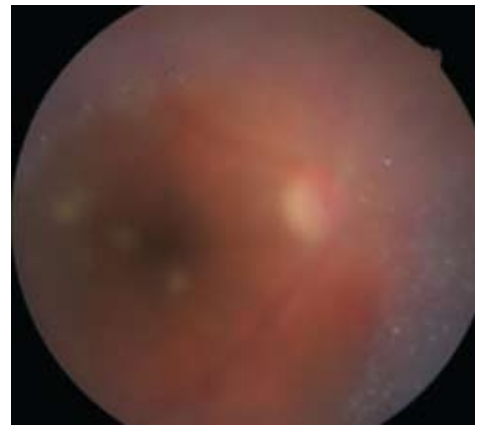


Figure 3 Snow banking

Diabetes and uveitis

Continuing his series of practice presentations, **Kirit Patel** describes two cases of inflammation

CASE 1

Vitritis

A 68-year-old woman came for a routine assessment following her successful cataract extraction. Her right cataract extraction was carried out four weeks ago and the left eight weeks ago. She stopped using eye drops three weeks ago and her previous ophthalmic history involved bilateral laser treatment for diabetic retinopathy, which was instigated following referral by the author the previous year. She was on insulin and metformin for her diabetes, aspirin and sotalol for heart fibrillation. Her only complaint was poor vision in the right eye with increased floaters.

6/12 R plano/-0.75DC X 90 VA 6/12 Add +2.75DS N6
6/12 L plano/-0.75DC X 90 VA 6/9 Add +2.75DS N5.

Findings

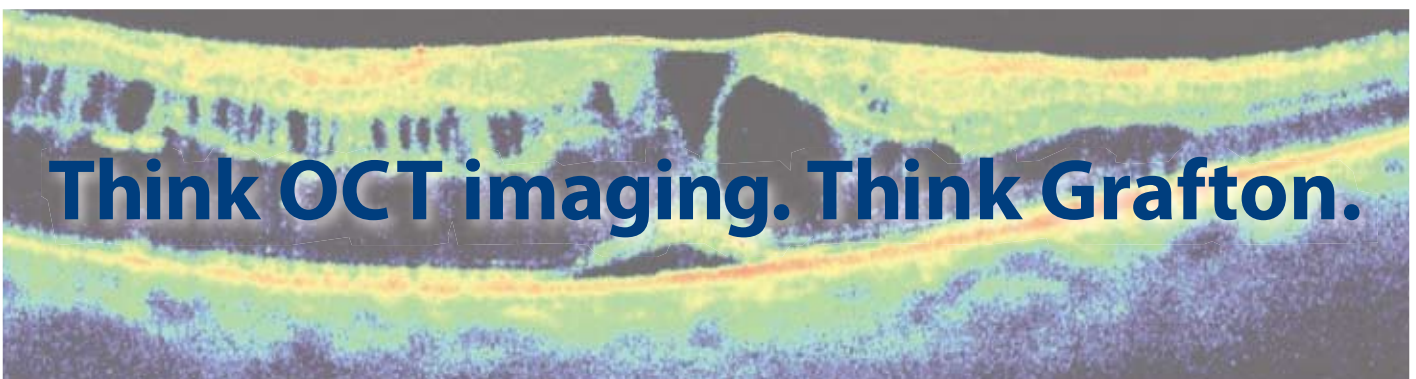
- Bilateral clear implants
- Left eye showing mild grade R1 background retinopathy consisting of exudates mainly (Figure 1)
- Left eye no obvious anterior or vitreous abnormalities
- A comparison of the 2007 left eye image (Figure 2) of the retina put alongside the recent retinal image showed circinate exudates superior and temporal to the fovea. Especially noticeable in 2007 was the drop in acuity in the left eye which indicated macular thickening and consequently referral to the eye specialist for focal laser treatment
- Right eye vitreous image taken and this revealed a hazy vitreous (snow banking, Figure 3). The fundus image revealed R1 retinopathy consisting of a nerve fibre haemorrhage and a few isolated hard exudates (Figure 4)

- Optical coherence tomography (OCT) showing vitreous floaters in front of the fovea but no signs of foveal thickness/cystoid maculopathy (Figure 5).

Conclusion

Patient was diagnosed as having intermediate to posterior uveitis. The snow banking cellular infiltration within the vitreous (vitritis) is usually classical of pars planitis. Intermediate uveitis due to cellular activity in the vitreous and the effect on the visual acuity would also classify it as posterior uveitis. The cause was likely to be pseudo aphakia uveitis as a consequence of the cataract operation. As the fundus view was difficult the author used the OCT to rule out macular pathology. Fortunately, the macula appeared healthy in both eyes, being 300 microns thick.

The patient was referred immediately back to her surgeon who on receiving



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Figure 4 R1 retinopathy consisting of a nerve fibre haemorrhage and a few isolated hard exudates

the e-report contacted her immediately and started her on steroid as well as anti-inflammatory eye drops.

In the author's view at the screening centre the images would have been taken and sent to the grader who would then ask the patient to return for more thorough biomicroscopy examination and, depending on the availability, it could be up to four weeks before the patient would have this examination. The author is an expert at taking vitreous images with the fundus camera which not a lot of technicians would undertake. At the optometric practice this was done in one visit, saving the patient extra inconvenience and also action was taken immediately.

CASE 2

Iritis/corneal oedema

A 79-year-old man came in for a routine diabetic examination complaining that his left eye was red and slightly uncomfortable. He had been prescribed chloramphenicol eye drops by his doctor a week earlier but this had no effect. He had right cataract extraction six weeks earlier and his visit today was

also to have new spectacles following cataract extraction. The eye drops were stopped after four weeks following cataract extraction. He took metformin for diabetes, simvastatin and he could not remember his medication for ulcerative colitis.

Spectacle prescription

6/18 R +1.75DS/-1.25DC X 115 VA
6/12 Add +2.50DS N8
6/18 L +1.00DS/-1.25DC X 80 VA 6/9
Add +2.50DS N5.

Signs

- Drop in visual acuity in the right eye (patient thought it was probably change in his eyesight following cataract extraction)
- Corneal oedema central, nasal and inferior right eye
- Five vertical corneal striae and

two folds observed. Lack of oxygen indicated by the presence of striae and folds and roughly 10-16 per cent corneal oedema

- Right corneal endothelium shows early signs of cell changes which appeared age-related. Right corneal endothelium had no beaten bronze appearance, classic of Fuch's endothelial dystrophy. There were no signs of corneal endothelial guttatae
- Left eye iritis showing cells in the inferior anterior chamber
- Left eye showing corneal thickening of about 995 microns measured by anterior lens module attached to the OCT. Pachymetry on the right cornea revealed a normal 538 microns corneal thickness (Figure 6)
- Left posterior corneal surface showing deposits of fibrotic membrane (clumps of cells)

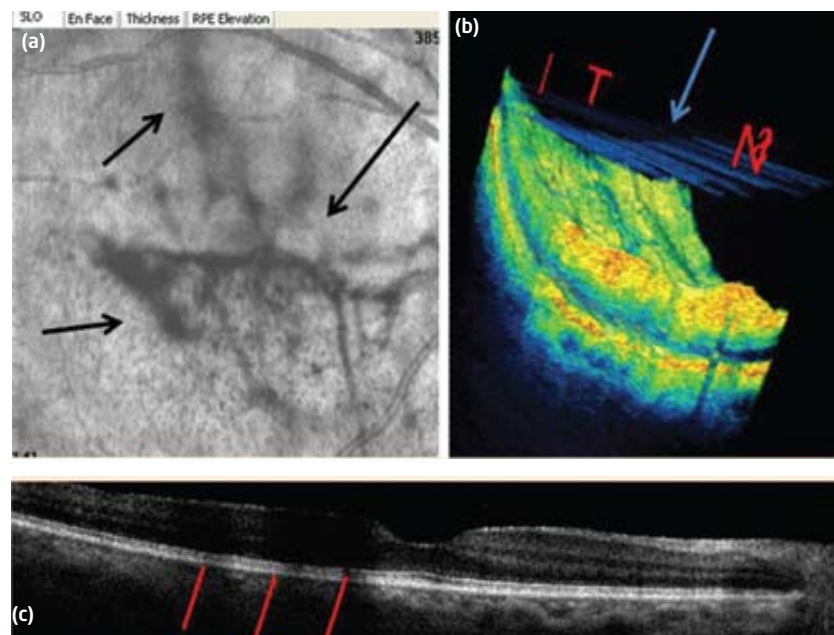


Figure 5 (a) Black/blobs/lines in front of the fovea – indicating cells in the vitreous. (b) The floaters/cells overlying the fovea (blue lines on 3-d image of the macula). (c) Normal macula thickness (note shadows on the left side of the fovea due to cells in the vitreous)

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Clinical

● Both eyes had grade R0 diabetic retinopathy (ie nil retinopathy).

Action taken

The patient was referred back to his operating consultant with the diagnosis of left eye iritis. It was explained to the patient that he had corneal oedema in the right eye which was unrelated to the iritis and it is possibly idiopathic corneal hypoxia following cataract extraction.

Treatment

The ophthalmologist began treatment with Maxidex and Mydratic eye drops in the left eye for the iritis initially to be used four times a day and gradually tapering to three times in the second week and twice in the third week and eventually once at the end of the month. He agreed with the corneal oedema observed in the right eye and he thought that the oedema was related to the cataract extraction which normally resolves within a week. He suggested that the patient uses Maxidex eye drops to the right eye but only twice a day for the first week and once a day the following three weeks. At the end of the month the patient was scheduled to see the specialist.

Discussion

Mild corneal oedema following cataract extraction is fairly common and this mild corneal oedema resolved spontaneously. Patients with endothelial cell loss or corneal dystrophy are at greater risk of developing postoperative corneal oedema. In patients with significant endothelial cell loss prior to surgery, the oedema may take weeks or months to clear. These patients are at risk of developing pseudophakic bullous keratopathy which may eventually require corneal transplant. If an unusually high degree of corneal oedema exists then Descemet's membrane detachment should be ruled out. This will be seen on slit-lamp examination as a separation of Descemet's membrane from the posterior surface of the cornea.

Our patient revealed mild corneal oedema persisting weeks after cataract extraction. The trauma following cataract surgery could be the prime reason for the corneal oedema. Also, the patient's inflammatory medical condition of ulcerative colitis may also be a reason. The patient's corneal endothelium showed no obvious marked cell loss and there were no obvious signs of corneal guttate which are prevalent in Fuch's endothelial dystrophy.

The presence of corneal stromal striae in our patient was a reliable indicator of the presence of corneal oedema. In 1971 Sarver first noticed vertical striae

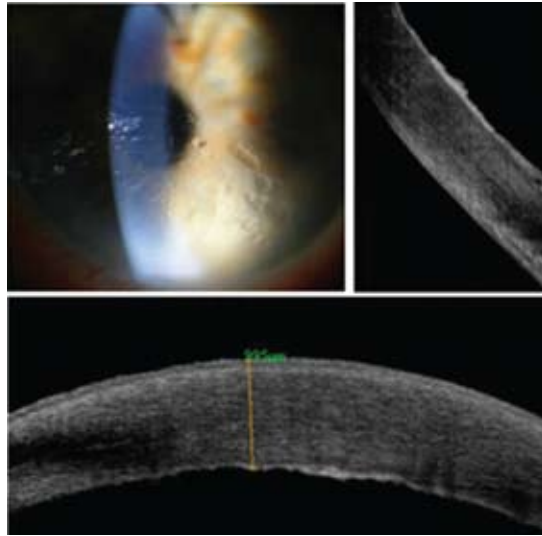


Figure 6 Left eye showing cells in the anterior chamber and fibrous cellular deposits on the posterior corneal surface. Also the cornea thickening to 1mm approximately

lines (stress lines) in the deep layers of the cornea of some wearers of soft contact lenses. The cause of the striae and corneal oedema is thought to be oxygen deprivation.

La Hood and Grant's study showed that one striae was equivalent to 4-6 per cent corneal swelling while five striae equated to 11 per cent swelling and one corneal fold was equivalent to 8 per cent swelling. During conditions of corneal swelling the bundles of collagen fibres in localised areas within the transparent cornea are made visible objectively. Entoptic phenomena result from the presence of these vertical lines. ●

Useful reading

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