CASE REPORT

Vanishing corneal vessels

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SUMMARY

We wish to highlight the importance of acknowledging the accompanying effects of topical phenylephrine drops on the eye other than its intended mydriasis. We reported a case of a 92-year-old woman with a corneal graft who was noted to have superficial corneal vascularisation which was not documented previously. After the instillation of topical tropicamide 1% and phenylephrine 2.5%, for funduscopy, the corneal vascularisation was not visible. When reassessed on another visit, tropicamide had no effect on the vessels and only phenylephrine did. We wish to highlight that when reviewing patients in cornea clinics, instilling phenylephrine prior to being seen may mask important corneal vascularisation.

BACKGROUND

In busy ophthalmic clinics, it is a common practice to request dilating drops which usually include topical tropicamide 1% and phenylephrine 2.5% prior to the patient entering the consulting room.

We wish to share our case and highlight that the use of topical phenylephrine 2.5% can mask corneal vascularisation which may in turn affect the management of patients.

CASE PRESENTATION

We reported a case of an 92 year-old female patient who had a penetrating keratoplasty 4 years ago in her left eye for pseudophakic bullous keratopathy. She was also diabetic. She has been attending regular follow-ups initially, however was lost to follow-up for 2 years prior to representation a year ago. On one of her recent follow-up appointments, she was noted to have corneal vascularisation growing into the graft at seven o'clock (figure 1) which was not documented in the previous clinical appointments. The graft was also decompensating and showed signs of failure. She normally receives dilating drops (topical tropicamide 1% and phenylephrine 2.5%) on arrival as funduscopy assessment for diabetic retinopathy are conducted as well. On this occasion, the dilating drops were instilled after the anterior segment was assessed. Interestingly, the corneal vessels vanished when reviewed following dilation, and a faint empty ghost vessel remained in place (figure 2).

INVESTIGATIONS

When reviewed in a separate visit, we instilled only topical tropicamide 1% which did not have any effect on the corneal vessel. However, upon application of topical phenylephrine 2.5%, the corneal vessel vanished into a ghost vessel within several minutes.

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Figure 1 Corneal vessel growing into graft.

Figure 2 Corneal vessel 'vanishes' after application of topical phenylephrine 2.5%.

OUTCOME AND FOLLOW-UP

The patient remains under regular follow-up; however, the graft has failed with poor vision of counting fingers. She has excellent vision in her contra lateral unaffected eye and decided not for further intervention in the affected eye.

DISCUSSION

Phenylephrine is an α 1-adrenergic receptor agonist and a vasoconstrictor. It is commonly used as a decongestant and it does not come as a surprise that it can constrict corneal vessels such that it 'vanishes'. However, we wish to highlight this fact and remind our colleagues of this phenomenon. As topical phenylephrine is used commonly in busy ophthalmic units, important corneal pathologies may be missed if patients are examined after instillation of drops. We recommend that patients are examined before instillation of topical phenylephrine. This is especially for patients with corneal pathologies whereby the presence or absence of corneal vessels has important implications to the management of these patients. Furthermore, if dilation is required prior to examination, topical phenylephrine 2.5% be omitted and only topical tropicamide 1% is used.

Learning points

- ▶ Topical phenylephrine 2.5% can cause corneal vessels to constrict such that it 'vanishes'.
- ▶ Patients should be assessed (especially patients with corneal pathology) prior to instillation of topical phenylephrine as important findings will be missed.
- ▶ Topical tropicamide alone should not affect the appearance of corneal vessels.
- ▶ Documentation regarding examination after instillation of drops is important for subsequent clinicians as a 'new' finding may have been masked previously.

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