



Figure 7. Linear mid-stromal corneal ulceration dorsal to a white corneal infiltration (lipid and bacteria) in a five-year-old shih tzu.

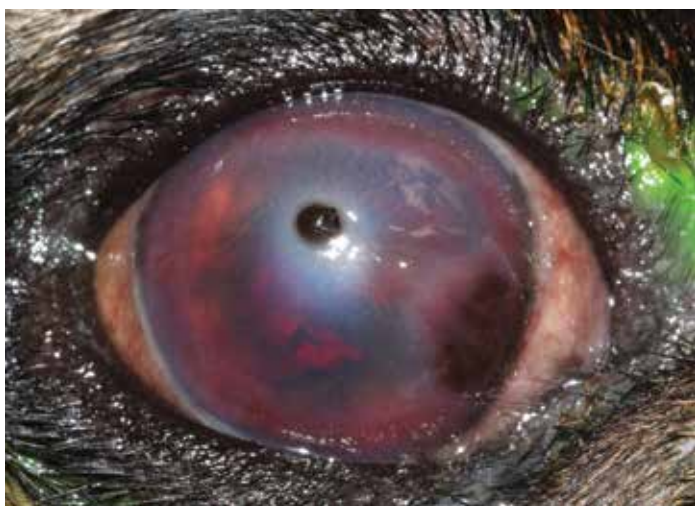


Figure 8. Axial pinpoint corneal perforation and hyphaema. There is medial corneal pigmentation and medial canthal entropion and trichiasis in a three-year-old pug.



Figure 9. Large axial corneal perforation with iris prolapse – the superficial corneal vascularisation reaching the corneal defect is an indication of chronicity of the corneal ulceration in a 12-year-old Cavalier King Charles spaniel.

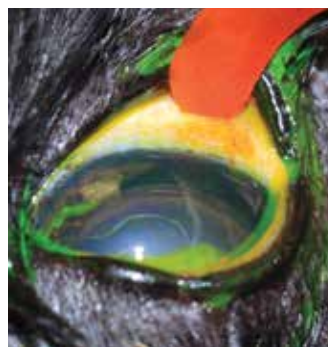


Figure 10. Fluorescein strip touching the conjunctiva.



Figure 11. Flushing the eye with saline after fluorescein staining.

Always test the contralateral, unaffected eye; because the eye with the corneal ulcer may have increased tearing owing to ocular discomfort, therefore STT-I can be 'normal' or increased.

It is important to take STT-I readings in light of the clinical signs – for example, if there is a corneal ulcer and the STT-I reading is 15mm/min, despite this being a 'normal' reading it should be increased in a painful eye. The pre-corneal tear film and cornea constitute an effective anatomical barrier against surrounding pathogens; therefore, qualitative and quantitative tear film deficiencies can contribute to recurrent corneal ulcerations and significant delay in corneal wound healing.

Fluorescein staining is very important in diagnosing corneal ulcers, especially when these are not readily visible to the naked eye – such as in cases of dendritic ulcers in cats or punctate ulcers (**Figure 4**). It should always be performed when conjunctival hyperaemia is present. This test is also useful for monitoring the response to treatment and serial photographs may be taken to assess the progression of the ulceration.

Fluorescein dye should always be flushed away with saline and when a fluorescein strip is used this should not contact the corneal surface in order

to avoid false positive results and damage to the corneal epithelium (it is epitheliotoxic) (**Figures 10-11**). If the dye is not readily flushed, it will diffuse through the inflamed cornea into the anterior chamber (fluorescein flare).

A Seidel test can also be performed to identify leaking corneal wounds or ulcers. The corneal stroma is the only corneal tissue to take up fluorescein dye – if a corneal defect is present with no fluorescein uptake (most commonly in the centre) the presence of a descemetocoele should be considered.

Corneal cytology should be performed:

- in cases of infiltrated superficial corneal ulcers that have yellow edges or deposits
- when there are stromal and melting ulcers (**Figure 12**)
- where there is mucopurulent discharge
- if the corneal ulcer has progressed despite treatment
- to aid antibiotic treatment choice.

Cytology should *not* be performed in fragile eyes, with descemetocoeles or in perforated corneal ulcers (positive Seidel test).

Corneal samples for in-house cytology can be collected using a cervical cytobrush (**Figure 13**) if available, or the blunt end of a scalpel blade – although care should be taken with this method