Secondary glaucoma due to trabeculitis in herpes simplex virus (HSV) keratitis

I. Carrillo Arroyo, P. Gómez Pérez, E. Gutiérrez Díaz, M. Montero Rodríguez, E. Mencía Gutiérrez
Ophthalmology Department, 12 de Octubre Hospital, Complutense University, Madrid, Spain

Purpose: Trabeculitis is a peripheral variant of endothelitis with precipitates and swelling of the anterior chamber angle. It presents with an acute elevation in the intraocular pressure (IOP). Chronic inflammation may lead to inflammatory cells blocking aqueous outflow and sometimes trabecular scarring with a chronic persistent glaucoma.

Results: A 52-year-old man complaining of red eye, epiphora and eyelid swelling in his left eye. He had developed chronic renal failure six years ago due to chronic pyelonefritis and had undergone a renal transplant; since then, he has had immunosuppressant treatment. Best-corrected visual acuity (VA) was 20/20. There were epithelial and stromal edema with punctata keratitis in the lower third of the cornea, the anterior chamber was deep and quiet and IOP was 15 mmHg. Eye fundus was normal. He was treated with topical betamethasone and ofloxacin. Two weeks later, the patient complained of blurred vision in his left eye, with VA decreased to 20/100. There was corneal edema and IOP was raised to 46 mmHg. The patient received maximum ocular hypotensive anti-inflammatory treatment but the IOP continued to exceed 30 mmHg. Differential diagnosis was made with carotid-cavernous fistula and apex syndrome, but imaging tests ruled out these conditions. One month later, increased stromal edema and an inferior marginal dendritic keratitis were observed. The tissue obtained by corneal scraping showed multinucleated giant cells and intranuclear eosinophilic inclusion, positive examination for HVS subtype 1 and real-time polymerase chain reaction. Oral and topical acyclovir and cyclopentolate were added to the therapy. The inflammation quickly resolved, IOP was reduced to 15 mmHg and the corneal edema disappeared 1 month later. Best-corrected VA in the left eye recovered to 25/20.

Conclusions: The autoimmune corneal endotheliopathy (Khodadoust and Attarzadeh, 1982) or acute idipathic corneal endotheliitis is characterized by corneal stromal edema progressing centripetally from the periphery and a slow-moving line of keratic precipitates followed by edema formation. Herpes virus particles have been demonstrated in the corneal endothelium or positive immunofluorescence of herpes virus in cells obtained from the aqueous humor. In our case, the presence of HVS DNA in the corneal scraping was demonstrated after developing typical dendritic lesions and virological investigation confirmed the diagnosis of HSV trabeculitis, with idiopathic corneal keratitis. Current findings suggest that HSV might be secreted from the trabeculum, innervated by the trygeminal nerve. This hypothesis is supported by the clinical observation that the corneal stromal edema usually begings from the periphery.