A 46 year old male presented for a corneal assessment. He reports that he has always felt his vision was a bit blurry and that he finds night driving difficult. He takes Celebrex and has an unremarkable ocular history. Both eyes had a similar appearance so only the right eye is shown below. His corrected acuity was 6/9 in this eye, central corneal thickness was 633µm and minimum corneal thickness 608µm. What is the most likely diagnosis for this patient (note that no contact tonometry was performed on this patient).
Answer

This patient has bilateral disc-like areas of stromal haze in the central cornea. OCT scans show focal areas of irregular thickening and thinning as well as increased hyper-reflectivity of the posterior cornea. Corneal topography showed anterior corneal steepening superonasally with flattening of the inferotemporal cornea. Central corneal thicknesses were greater than average at 633µm (OD) and a similar reading on the left eye.

These findings are consistent with a diagnosis of posterior keratoconus – a rare, non-progressive condition with sporadic presentation. It is usually considered a developmental disorder, however it may also arise secondary to ocular trauma. Vision impairment may arise from stromal scarring or amblyopia.

There are 2 distinct types of this condition described in the literature:

- Keratoconus posticus generalis: characterised by increased curvature of the entire posterior cornea
- Keratoconus posticus circumsrcriptus: characterised by localized paracentral or central posterior corneal indentation, as in our patient.

This patient was scheduled for review in 6 months to establish stability of the condition.