Spectral domain anterior segment optical coherence tomography assessment of pterygium and pinguecula

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Abstract:

To study the morphological patterns of pterygia and pingueculae using high-resolution anterior segment spectral domain optical coherence tomography (SD-OCT). Methods: Prospective cross-sectional study of 25 eyes presented with pterygia and pingueculae was conducted, and the eyes were examined by anterior segment SD-OCT. Results: We examined 25 eyes, including 13 eyes with primary pterygia, six eyes with recurrent pterygia, one case with a pseudopterygium and five eyes with pingueculae. Primary pterygia revealed elevation of the corneal epithelium by a wedge-shaped mass of tissue separating the corneal epithelium from the underlying Bowman’s membrane, which became wavy and interrupted. We found satellite masses of pterygium tissue advanced under the epithelium beyond the clinically seen pterygium margins. In recurrent pterygia, we detected that the central tip of the pterygium was more advanced and creeping beneath the basal corneal epithelium than the primary pterygium. In pseudopterygium, the SD-OCT images showed that the overgrowing membrane was not really attached to the underlying cornea. In cases of pingueculae, SD-OCT revealed a wedge-shaped mass that was nearly similar in pattern to that of the pterygium but stopped at the limbal region. Immediately after removal of pterygia, we noticed many remnants of the pterygium masses over the corneal stroma in spite of the clinically clear appearance of cornea. Conclusions: SD-OCT provided us with high-resolution images of the pterygium and the pinguecula and showed clearly the anatomical relationship between the corneal tissues and these lesions. The use of this new modality of imaging may help to decrease the current recurrence rates after pterygium excision through using the anterior segment SD-OCT in the evaluation of these lesions.

Keywords:

pinguecula • pterygium • recurrent pterygium • spectral domain OCT

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