BLEPHAROKERATOCONJUNCTIVITIS:CORNEAL ANATOMICAL CHANGES IN CHRONIC DISEASE

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Introduction

Blepharokeratoconjunctivitis (BKC) in children is a condition that has been described as a syndrome comprising of a myriad of clinical features arising from anterior and/or posterior lid margin disease which may result in a spectrum of corneal changes.

There is great variability in the reported incidence of corneal involvement in childhood BKC, ranging from 5-100 % in literature. [1,2,3,4] Corneal damage is unlikely to occur in children under 4 years of age and has been reported to be more prevalent in older children who have had a longer clinical course of disease. [5]

A type IV cell-mediated immune response to bacterial cell wall antigens triggers inflammation and development of the disease. In children the immune response is thought to be exaggerated leading to increased susceptibility to corneal damage. [6] With prolonged inflammation the epithelium overlying the infiltrate breaks down leading to peripheral ulceration, necrosis and eventual thinning and scar formation.

We report a case series of patients with a history of corneal infiltrates resulting in a specific pattern of corneal thinning and ring scarring and ultimately corneal astigmatism.

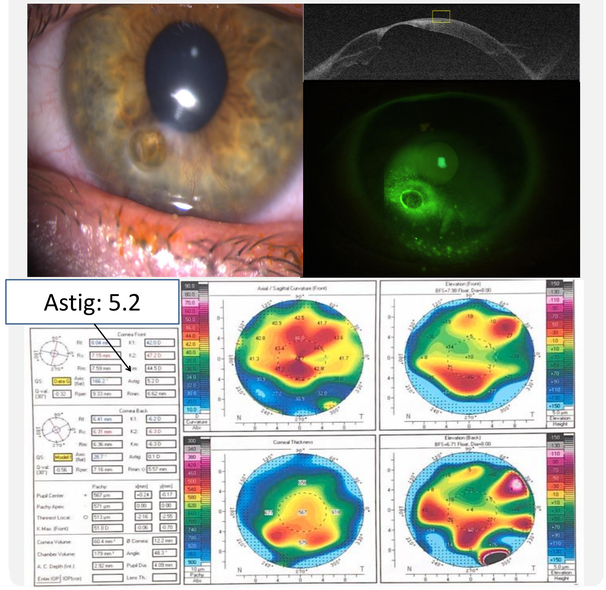
Method

Case notes review of 3 patients (5 eyes) with history of chronic recurrent disease. Slit-lamp photos, anterior segment optical coherence tomography (AS-OCT), and Pentacam Scheimpflug images were used in each affected eye in order to characterise the changes observed.

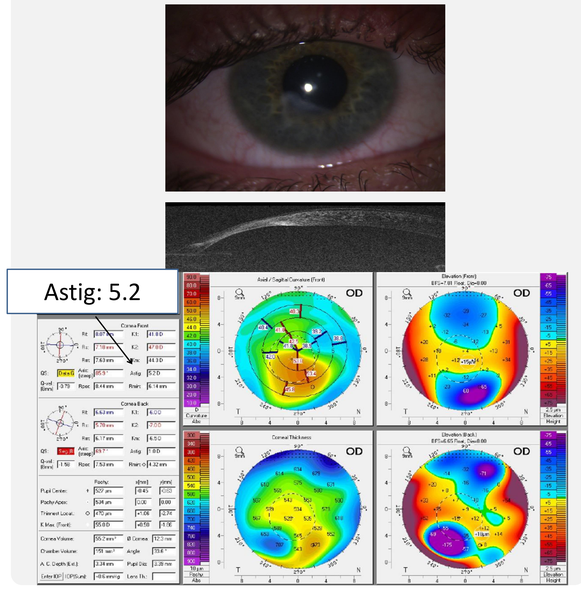
Results

We found a consistent pattern of corneal thinning predominantly affecting the inferonasal quadrant (3 eyes) and inferotemporal quadrant (2 eyes). AS-OCT exhibited loss of corneal stroma down to pre-Descemet layer(PDL) with a surrounding ring of scar formation. These changes led to visually significant corneal astigmatism as evidenced by the central 4mm zone of the Pentacam images showing astigmatism with a mean of 6.50 dioptres(D), ranging from 2.80 D to 11.8D. The figures below demonstrate these changes in 3 patients.

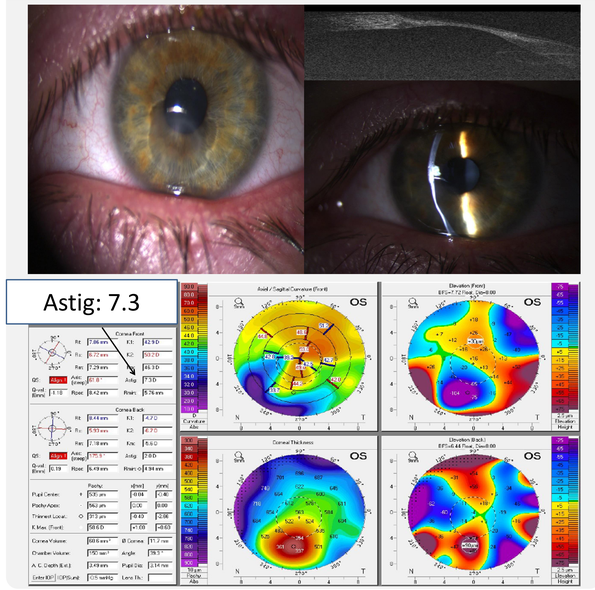
Case 1



Case 2



Case 3



Conclusion

Chronic corneal changes in BKC can present in potentially sight threatening corneal damage. This case series represent a novel consistent clinical picture in BKC eyes with chronic inflammation. Further studies looking at the specific anatomical changes described here can help detect the disease sooner and help distinguish the more destructive phenotype of disease that would benefit from early intensive treatment at an early stage. To the best of our knowledge, there have been no previous studies in literature describing these specific anatomical features reported here.

References

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