Contact lens-induced pseudo-dystrophy of the cornea?

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Abstract. Whitish dots in the stroma of the cornea resembling the cloudy dystrophy were observed in 4 patients wearing HEMA contact lenses; a lattice-like corneal pattern was seen in another patient wearing HEMA contact lenses. There were no complaints. Visual acuity was normal. Corneal sensitivity was normal or reduced. The pseudo-dystrophies vanished after replacement of the HEMA lenses by Boston IV material.

Introduction

In 1983 we examined a contact lens wearing patient presenting with whitish dots in the stroma of the central part of the cornea. Was it a dystrophy or contact lens-induced pathology? Later on we examined 3 more patients presenting with the same picture. Furthermore a patient with a lattice-like corneal pattern during contact lens wear was observed. Two papers describing whitish contact lens related corneal dots were found, but none reporting a lattice-like pattern.

Case reports

Case 1. Female born 17011958, wore soft contact lenses (Wöhlk HEMA 38; OU sph -3.00; diameter 15.5 mm) for 9 years without complaints. Use of Normol and Flexsol solution (chlorhexidindigluconate, thiomersal and disodium edetate). Routine examination December 1983: normal VA and normal corneal sensitivity. Slitlamp examination: OU deep in the central part of the corneal stroma adjacent to Descemet's membrane there were whitish cloudy dots. There also was a cornea guttata aspect. The family history was negative. Differential diagnosis: central cloudy dystrophy or contact lens-induced pathology? The soft lenses were replaced by Boston IV contact lenses, the Normol and Flexsol solutions by Boston cleaner. The follow-up period was 3 years. After 4 months the whitish dots had disappeared, not the guttata aspect. During the follow-up period she once had a central corneal erosion. Keratometer readings prior to contact lens wear were not obtainable.

Case 2. Female born 12081960, wore soft contact lenses (Wöhlk HEMA 38; OU sph + 4.50; diameter 12.5 mm) for 7 years without complaints. Use of CL33
solution (ethylmercurithiosalicylate and disodium edetate). Routine examination August 1985: normal VA, decrease of corneal sensitivity. Slitlamp examination: OU whitish cloudy dots in the central 8 mm part of the cornea, mostly deep in the stroma near to Descemet's membrane. Differential diagnosis: central cloudy dystrophy or contactlens-induced pathology? The family history was negative. The soft lenses were replaced by Boston IV contact lenses and the CL33 solution by Boston cleaner. The follow-up period was 18 months. After 6 months the white dots had disappeared; we now could see pigment dust on the corneal endothelium. Keratometer readings prior to contact lens wear were not obtainable.

Case 3. Male born 01041949, wore soft contact lenses (CIBA-soft 38; RE sph -6.50, LE sph -5.75; OU diameter 13.8 mm) for 6 years without complaints. Use of CL33 solution. Keratometer readings prior to contact lens wear RE 7.50 mm × 7.38 mm and LE 7.42 mm × 7.35 mm. Routine examination April 1986: normal VA and normal corneal sensitivity. Slitlamp examination: OU lattice-like aspect of the corneal stroma; pigment dust on the corneal endothelium. It was not possible to photograph the lattice pattern. Differential diagnosis: incipient lattice dystrophy or contact lens-induced pathology? The family history was negative. Keratometer readings RE 7.40 mm × 7.30 mm and LE 7.32 mm × 7.26 mm. The soft lenses were replaced by Boston IV contact lenses and the CL33 solution by Boston cleaner. The follow-up period was 6 months. After 6 months the lattice-like aspect had almost disappeared: there was only a small V-shaped opacity in the RE.

Case 4. Female born 15101947, wore soft contact lenses (Weicon HEMA38; sph -2.00; diameter 13.0 mm) for 9 years. Keratometer readings prior to contact lens wear RE 7.70 mm × 7.90 mm and LE 7.33 mm × 7.88 mm. Use of Normol and Flexsol for one year; because of allergic reaction the patient from 1978 on continued by boiling the contact lenses. Routine examination August 1986: normal VA and normal corneal sensitivity. Slitlamp examination: RE > LE whitish dots deep in the central 4 mm part of the corneal stroma adjacent to Descemet's membrane (Fig. 1 and 2); edema of the overlying central part of the stroma. Differential diagnosis: central cloudy dystrophy or contact lens-induced pathology? The family history was negative. Notwithstanding the advice to stop wearing soft lenses she continued wearing them for 6 months. Examination February 1987: complaints of blurred vision RE. VA RE 0.8 and LE normal. Corneal sensitivity RE decreased and LE normal. Slitlamp examination: RE > LE increased area with whitish pre-Descemet dots and edema of the overlying stroma. Keratometer readings: RE 7.54 × 7.68 mm and LE 7.58 × 7.70 mm. The patient now could be persuaded to replace the soft lenses by Boston Equa lenses.

Case 5. Female born 24121959, wore contact lenses since 1976. Keratometer readings prior to contact lens wear RE 8.30 mm × 8.05 mm and LE