Brown-McLean syndrome revisited

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A 52 year old male had undergone cataract surgery in both the eyes elsewhere without intraocular lens (IOL) implantation 11 years ago, and now presented with defective vision. There was absence of light perception in the right eye. The best corrected visual acuity in the left eye was 20/50, 6/9 with –2.75 dsph. –1.25cyl. × 90°, near add +2.50dsph. Slit-lamp examination of the right eye [Fig. 1a] showed central band shaped keratopathy and aphakia. The left eye [Fig. 1b-d] showed peripheral corneal edema and aphakia. Intraocular pressure was 12 mmHg (right eye) and 20 mmHg (left eye). Salient posterior segment findings were optic atrophy in the right eye, normal optic disc in the left eye, extensive myopic chorioretinal degeneration in both eyes with epiretinal membrane overlying the fovea in left eye. Axial length was 32.55 mm (right eye) and 29.75 mm (left eye). Imaging of the left eye [Figs. 2 and 3] showed absent endothelial cells in corneal periphery with increased peripheral corneal thickness, and epiretinal membrane. Visual field was normal in left eye. He was diagnosed with aphakia, pathological myopia in both the eyes and Brown-Mclean syndrome in the left eye. He was advised spectacles (CR-39 lenses), artificial tears, and advised regular follow-ups.

Discussion

Brown-Mclean syndrome is a rare static peripheral annular corneal edema.[1-3] It is usually seen many years after intra- or extracapsular cataract surgery in eyes left as aphakia. No exact mechanism is known. The role of iridodonesis has been challenged in recent times.[4] Although secondary scleral-fixated IOL has been proposed as a treatment option to increase unaided vision,[5] we preferred a conservative approach in our patient as this was the only functioning eye with good vision. Nowadays with contemporary cataract surgical techniques, this uncommon complication is so rarely seen that most modern-day ophthalmologists are unaware of it.

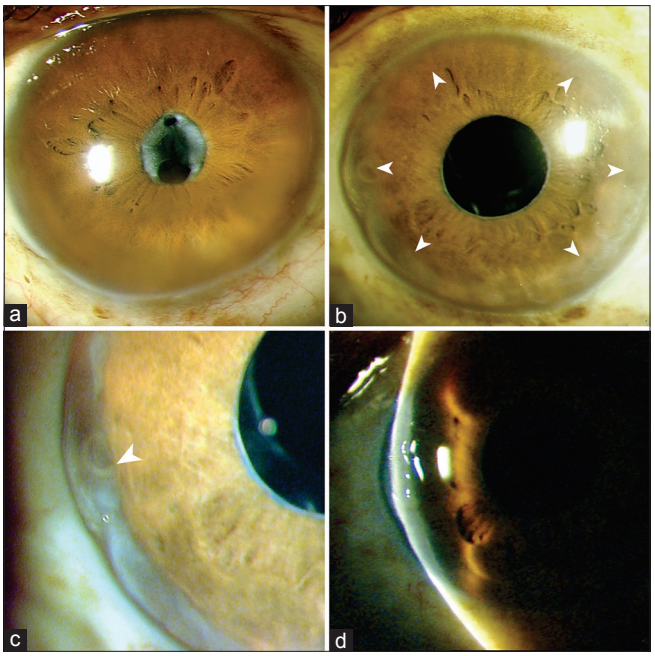

Figure 1: Clinical slit-lamp photograph of the right (a) and left (b-d) eyes. The right eye (a) has a central band-shaped keratopathy, deep and quiet anterior chamber, irregular pupil with 360° posterior synechiae, a white fibrous retro-pupillary membrane and aphakia. The left eye (b-d) showed peripheral annular zone of corneal edema (1–2 mm wide, white arrowheads) adjacent to the corneoscleral limbus from 2 o'clock to 10 o' clock with epithelial thickening and one large bullae (white arrowhead), deep and quiet anterior chamber, iridodonesis, regular pupil, lens capsule remnants and aphakia

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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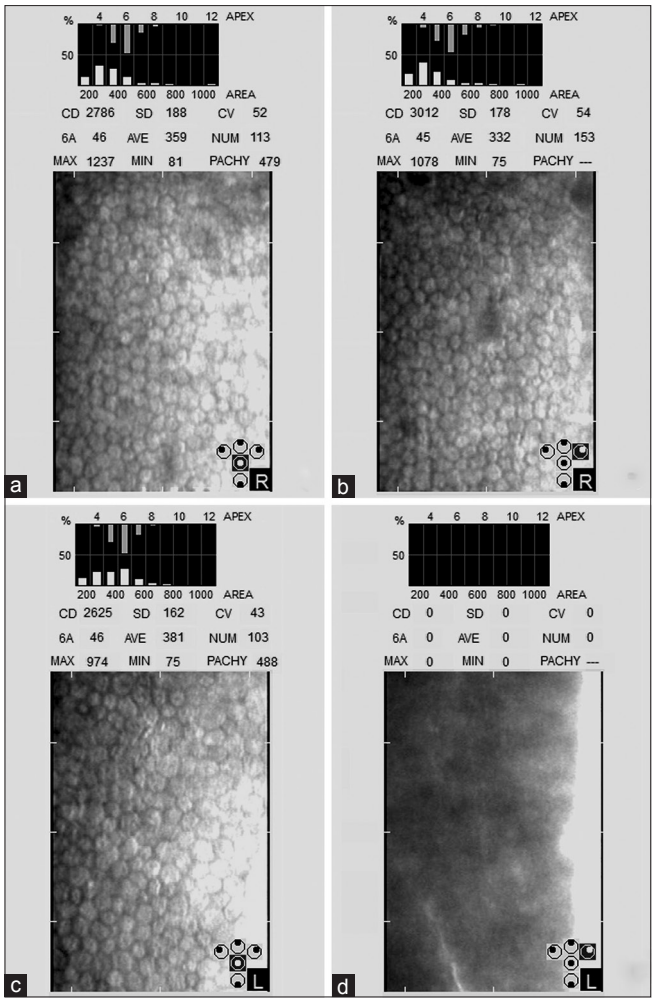

Figure 2: Non-contact specular microscopy of the corresponding areas of the corneal endothelium of the right (a and b) and left eye (c and d). The endothelial cell count in the central cornea is good with normal hexagonal morphology in both the eyes (a and c). While cell count and morphology are preserved in the peripheral cornea of the right eye (b), there are few cell drop-out areas. But the peripheral cornea in the left eye shows complete absence of endothelial cells (d)

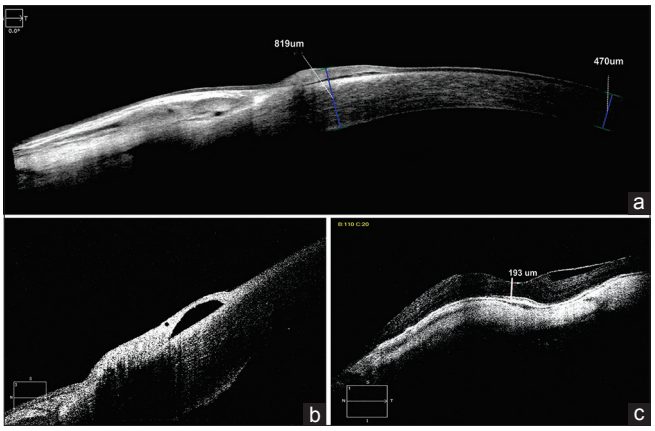

Figure 3: Spectral domain optical coherence tomography of the left eye. High-resolution image shows that the peripheral cornea is nearly twice as thick as the central cornea (a). Anterior segment 5-line raster imaging shows thickened peripheral cornea with epithelial hypertrophy and bullae (b). Macular scan shows abnormal foveal contour with epiretinal membrane (c)

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Conflicts of interest

There are no conflicts of interest.

References

1. Tuft SJ, Muir MK, Sherrard ER, Buckley RJ. Peripheral corneal edema following cataract extraction (Brown-McLean syndrome). Eye 1992;6:502-5.
2. Gothard TW, Hardten DR, Lane SS, Doughman DJ, Krachmer JH, Holland EJ. Clinical findings in Brown McLean syndrome. Am J Ophthalmol 1993;115:720-37.
3. Reed JW, Cain LR, Weaver RG, Oberfeld SM. Clinical and pathologic findings of aphakic corneal edema: Brown-McLean Syndrome. Cornea 1992;11:577-83.
4. Suwan Y, Teekhasaenee C, Lekhanont K, Supakontanasan W. Brown-McLean syndrome: Role of iridodonesis. Clin Ophthalmol 2016;10:671-7.
5. Kam KW, Jhanji V, Young AL, Brown-McLean syndrome. BMJ Case Rep 2013. doi: 10.1136/bcr-2013-201280.