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CASE REPORT

The longest ocular axial length ever recorded?

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This is a brief report of a case of possibly the longest ocular axial length documented in the literature. Contact a-scan ultrasound gave a mean AL of 38.34mm. To the best of our knowledge, this is the longest reported AL of a human eye. 15mls of silicone oil were needed to fill the vitreous cavity during surgery for retinal detachment.

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Introduction

We would like to report a case which may represent the longest axial length (AL) measured in a human eye.[1]

Materials and Method

A case description is provided.

Results

A 47-year-old phakic Maltese Caucasian patient presented with a recurrent rhegmatogenous retinal detachment. This happened two years after removal of a scleral buckling explant which had been in situ for 25 years and had to be removed due to infection. There was very severe posterior chorioretinal atrophy secondary to degenerative myopia (Figure 1). When he presented the retinal detachment, the visual acuity was hand motion, but the posterior extension of subretinal fluid was limited by the posterior atrophy. The very poor visual acuity was thus likely attributable to the state of the macula.

There was no known history of childhood glaucoma and no systemic disease which was associated with axial myopia, but the patient was very tall. The other eye was non-seeing due to untreated esotropia since childhood. Three-port 23-gauge pars plana vitrectomy was deemed necessary, and pre-operative biometry was performed. The AL was unmeasurable with an optical device (Lenstar LS900, Haag-Streit AG, Koeniz, Switzerland). Contact a-scan ultrasound (Quantel Axis-II, Quantel Medical, USA) gave a mean AL of 38.34mm; the other eye had a similar length (Figure 2). If one outlying AL measurement (#2) of the index eye is excluded, the mean AL would be 38.42+/-0.20mm. During the procedure (TF), excessive scleral indentation was required to reach the posterior pole during aspiration of fluid with a soft-tipped cannula from over the disc on fluid-air exchange; surgical maneuvers were difficult in such an abnormally large eye. With a flat retina and the crystalline lens in situ, 15mls of silicone oil (Siluron 1000; Geuder AG, Heidelberg, Germany) were needed to fill the vitreous cavity at the end of the operation to serve as persistent tamponade. Oil removal (JV) was done 13 months later to optimize his refractive status.

Figure 1 Colour photo of the postoperative appearance of the posterior pole of the right eye with the crystalline lens and silicone oil in situ. Severe chorioretinal atrophy of the macula is prominent.

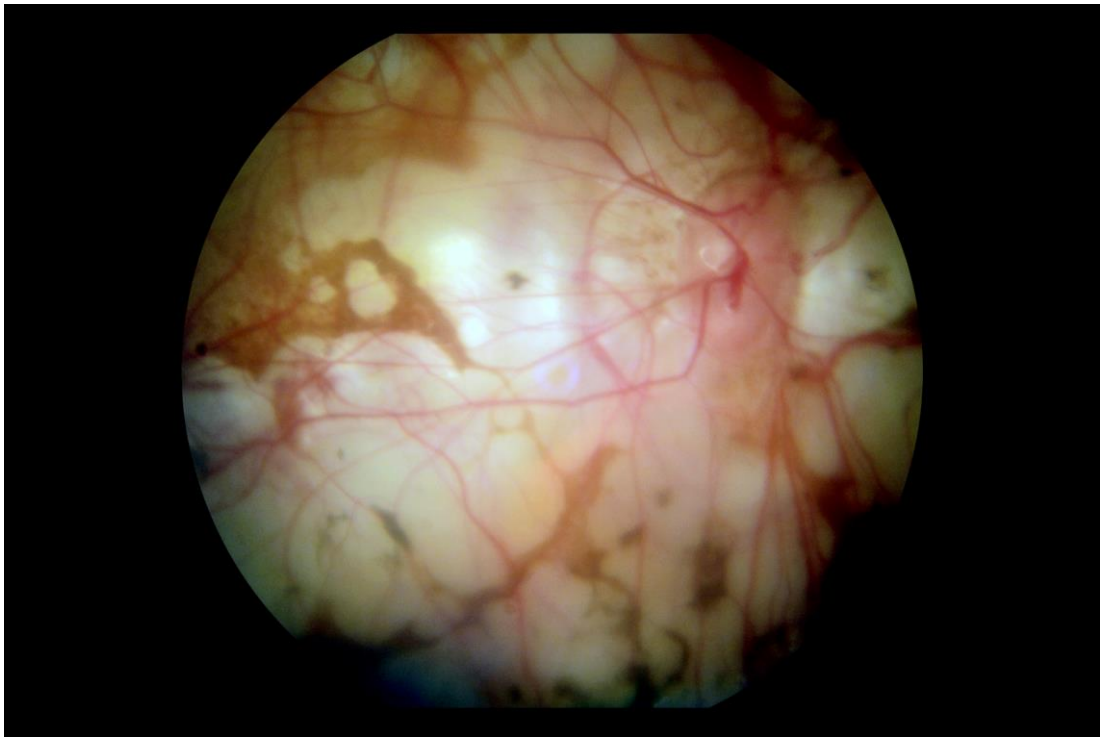
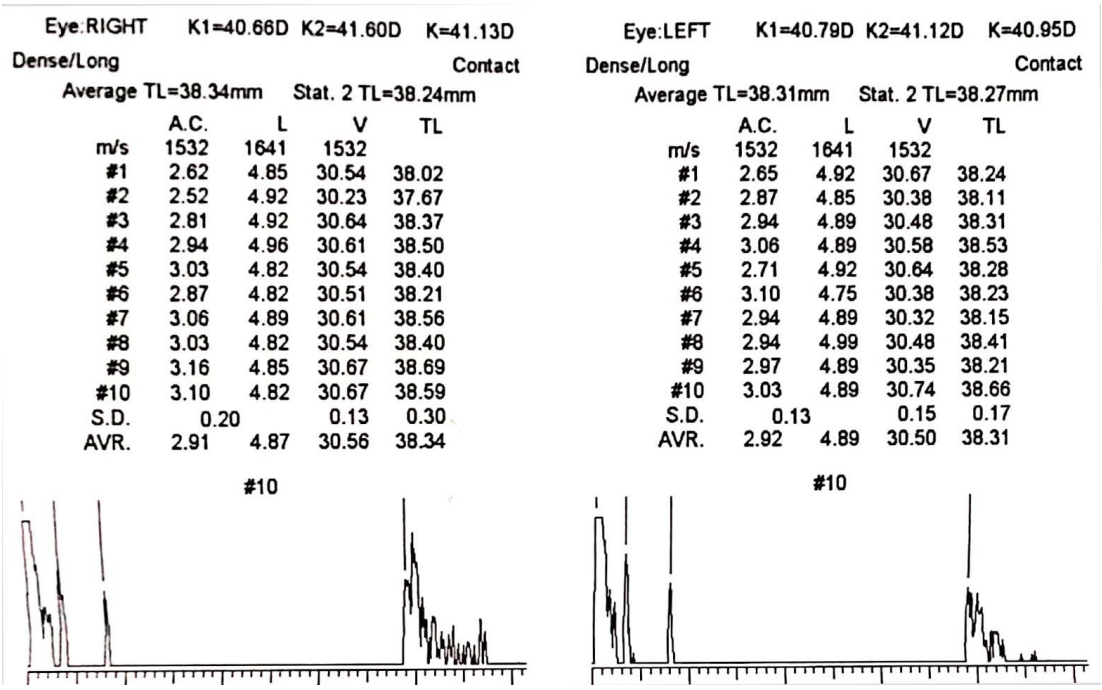


Figure 2 Axial length measurements of both eyes obtained with contact a-scan ultrasound.



Discussion

It may be argued that the longstanding scleral buckle may have contributed to persistent axial elongation; however, this patient's ocular axial length was equally exceptional in the fellow eye which did not have a history of scleral buckling. This case illustrates some of the unique challenges presented by cases of extreme myopia, which may become a more common occurrence in the future.[2] Design of surgical instruments should cater for such long eyes with telescoping probes or extensions.

Acknowledgments

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References

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