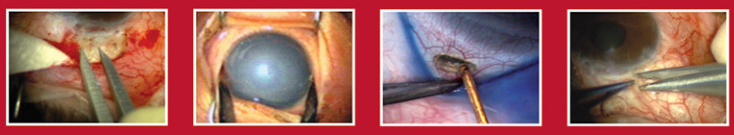
Surgical Techniques in Ophthalmology

Glaucoma Surgery

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Chapter 2

Aniridia Rings: Surgery for Advanced Congenital Glaucoma

Ahmad K Khalil (Egypt)

A child presented at the age of 9 with uncontrolled high intraocular pressure, complicated cataract, partial aniridia (Fig. 1), with a visual acuity of finger count at 30 cm. Owing to the complicated nature of the condition, a staged approach was planned. Trabeculotomy was done first to control the high IOP. Six months after persistent pressure control, cataract surgery with implantation of specially designed aniridia rings to cover the aniridic part, followed by implantation of 3-piece acrylic intraocular lens.

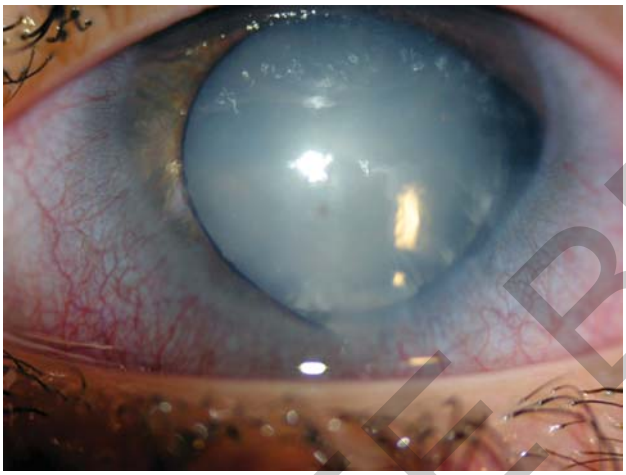


Fig. 1

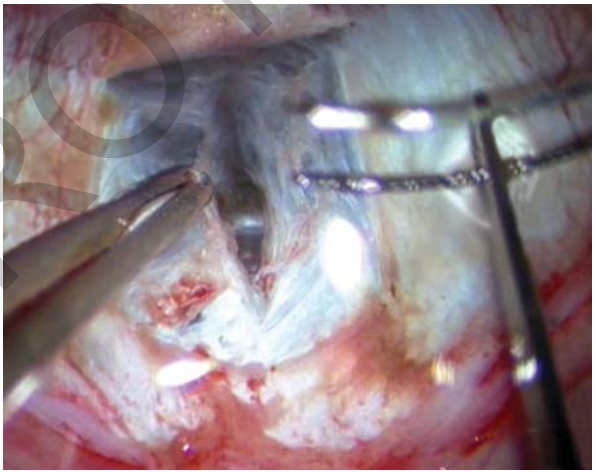


Fig. 2

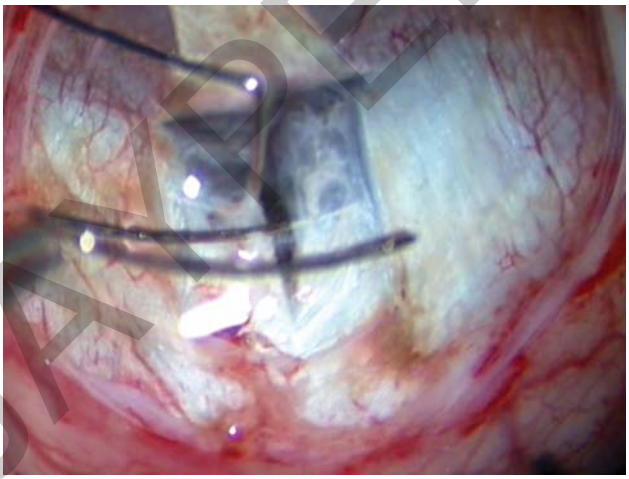


Fig. 3

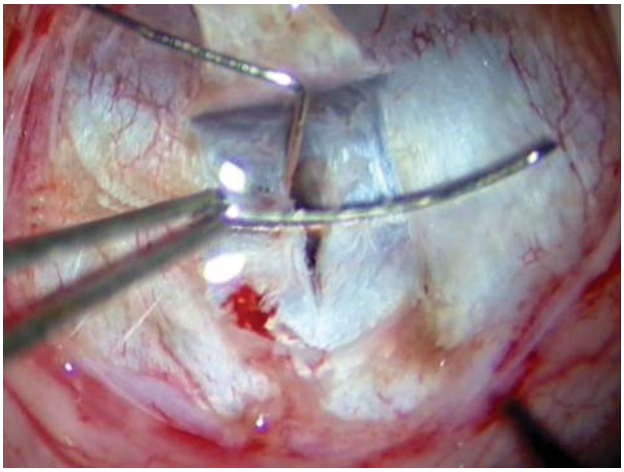
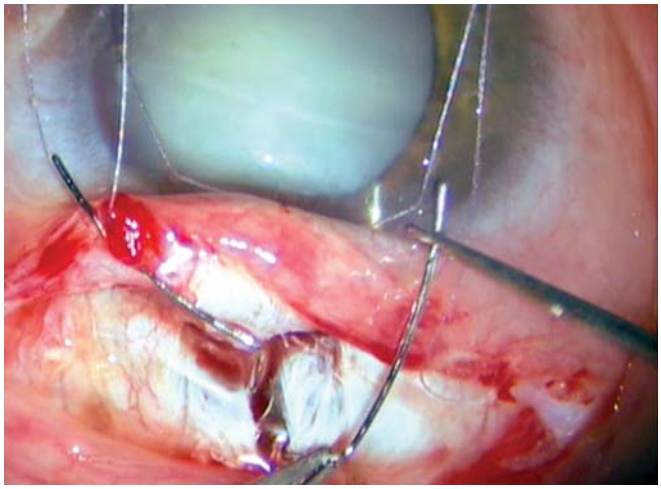
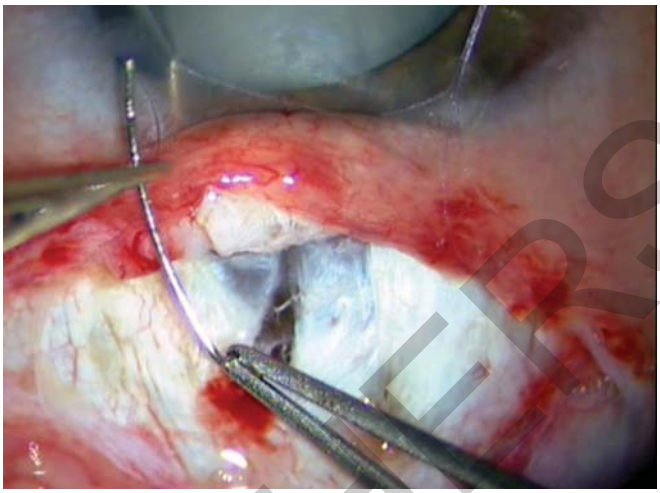


Fig. 4

Figs 2 to 4: Left and right trabeculotomy probes are being inserted through the incised edge of the canal of Schlemm

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Figs 5 and 6: Probes are rotated inwards into the anterior chamber and gently withdrawn out to avoid injury to the lens capsule

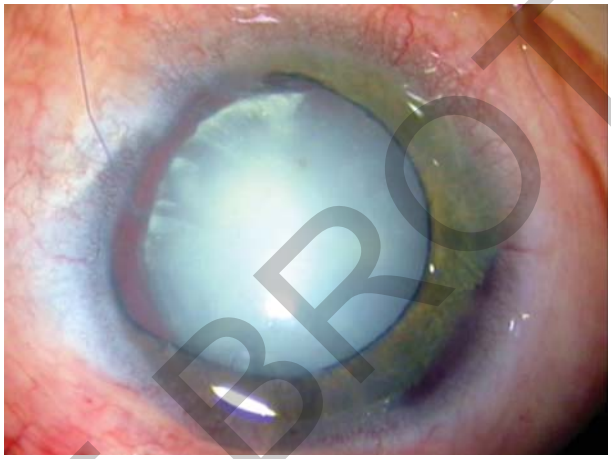
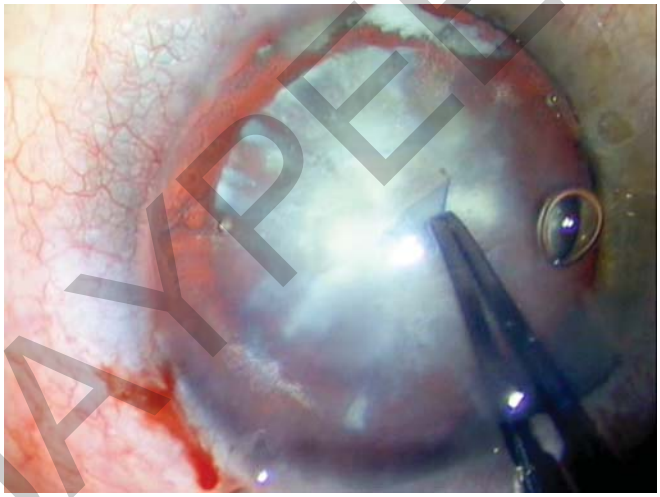
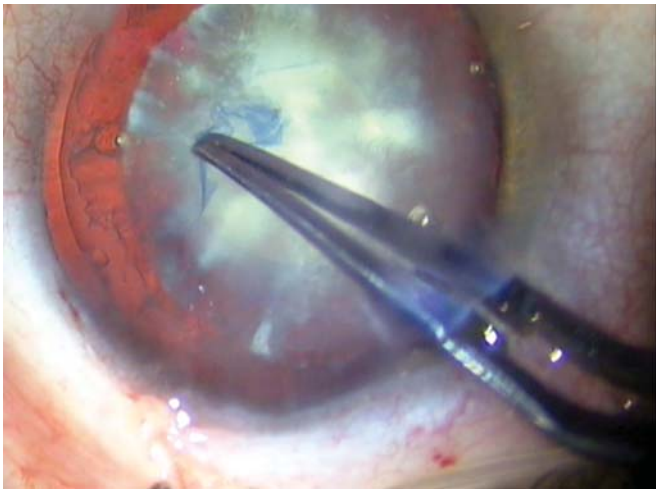
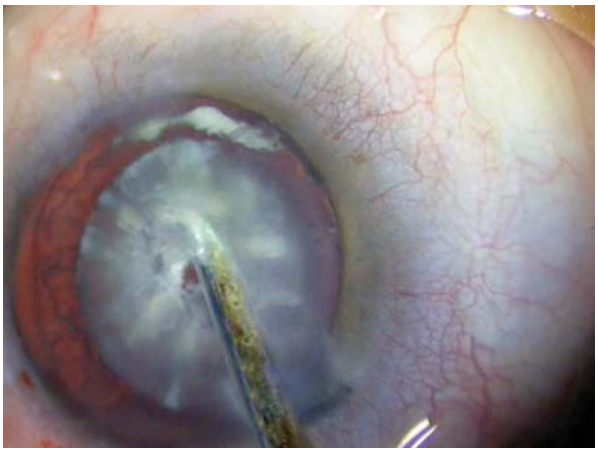


Fig. 7: This is what I call beautiful hyphema; a gentle tinge of hyphema at the trabeculotomy site confirming severing the trabecular meshwork in this area

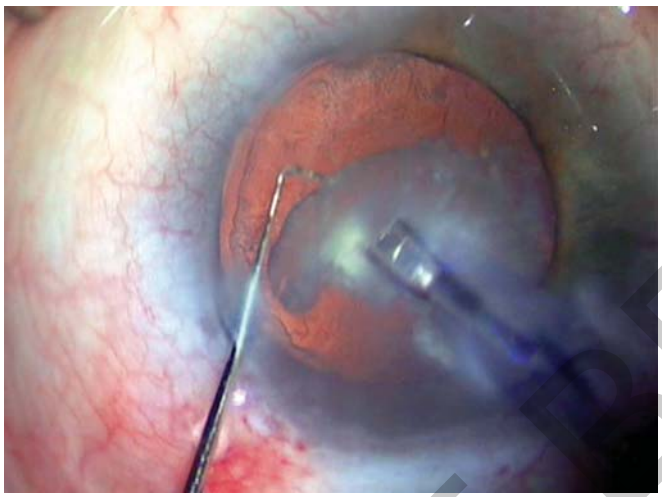



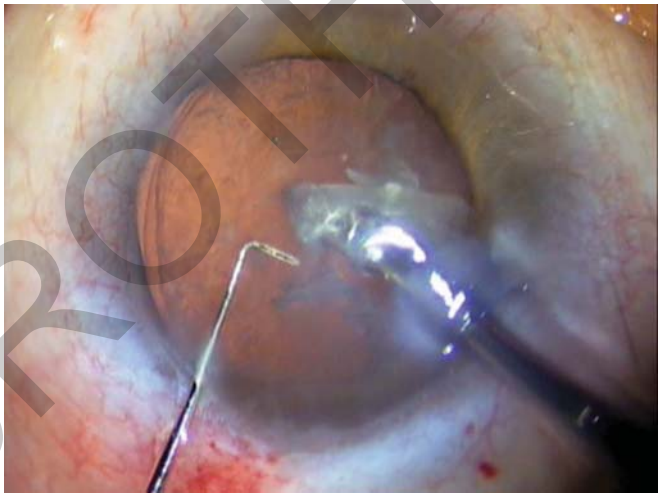
Figs 8 and 9: Six months later with stable control of the IOP, cataract removal was carried out. Here a tough capsulotomy is being performed. Capsular stain is useful not only for proper visualization of the anterior capsule in this white cataract, but also in decreasing the elasticity of the capsule in this young eye, and hence making the capsulotomy path more predictable

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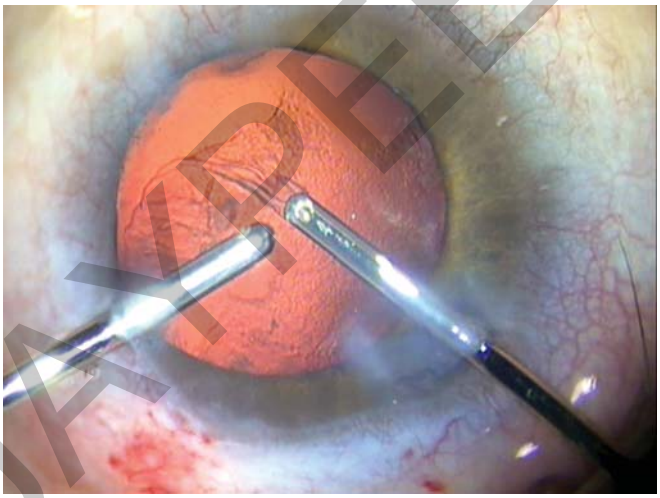


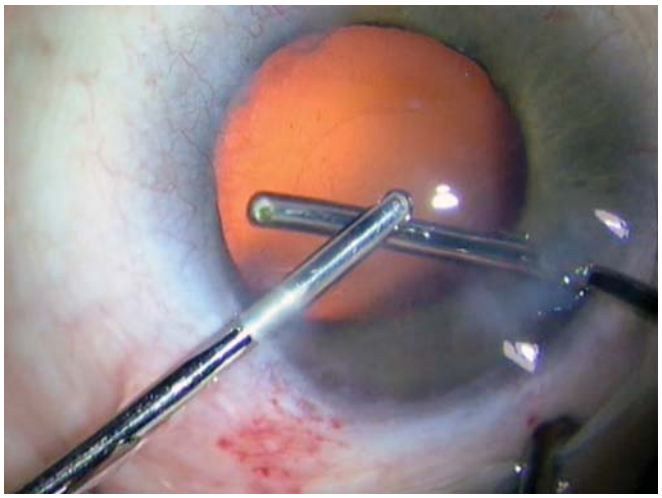
Figs 10: Simple irrigation aspiration was not easily attainable because of the complicated nature of the cataract





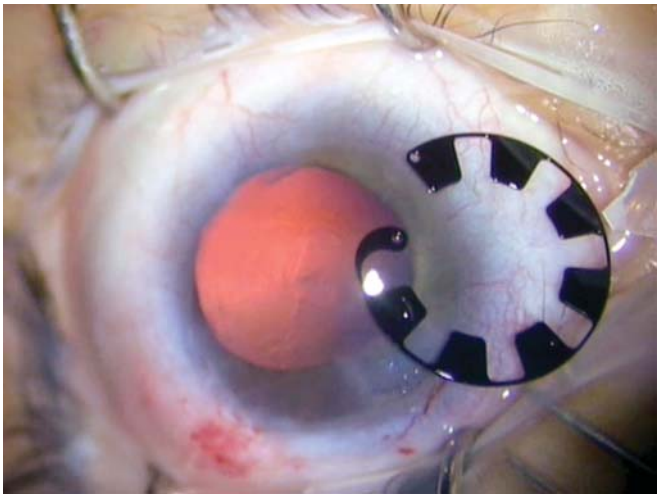
Figs 11 and 12: Soft nucleus is easily removed by phacoemulsification

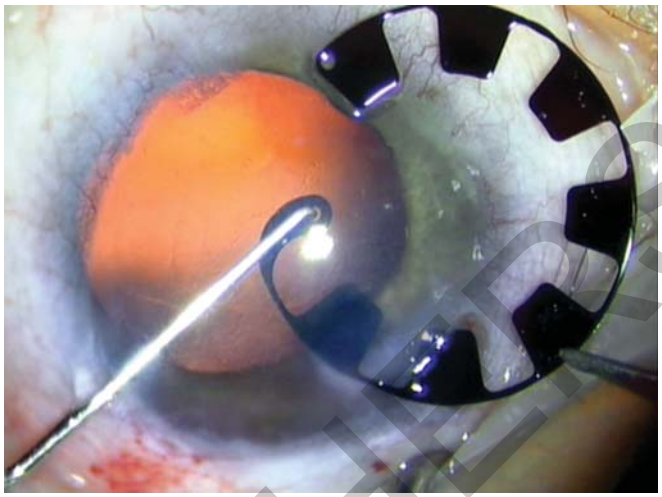




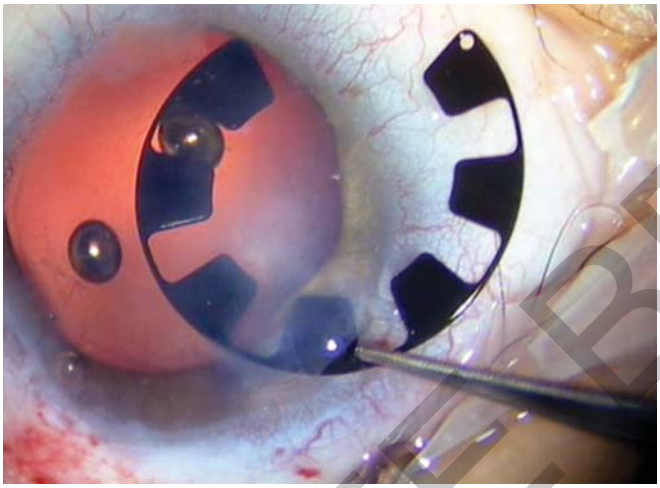
Figs 13 and 14: Bimanual irrigation aspiration is carried out, paying special attention for anterior capsule polishing to lessen the incidence of capsular opacification

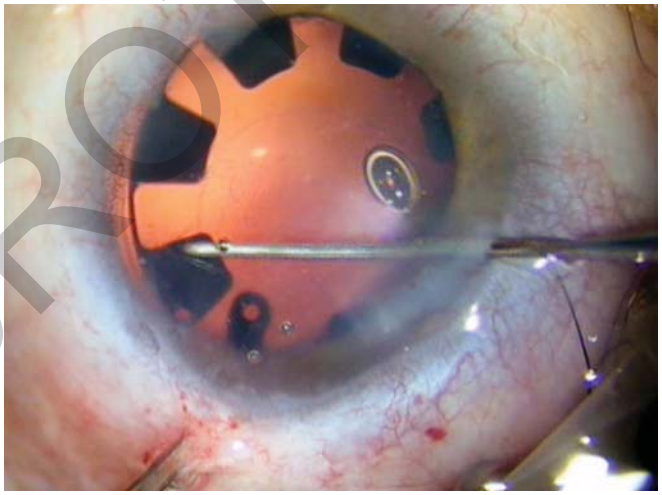
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Figs 15 and 16: Two interdigitating aniridia rings made of stained PMMA are introduced in the capsular fornix. When the second ring is inserted, the pigmented segments cover the spaces between the pigmented segments of the first ring. There are several forms of these aniridia rings, which are used according to the aniridia pattern





Figs 17 and 18: The first ring is nicely secured in the capsular sulcus

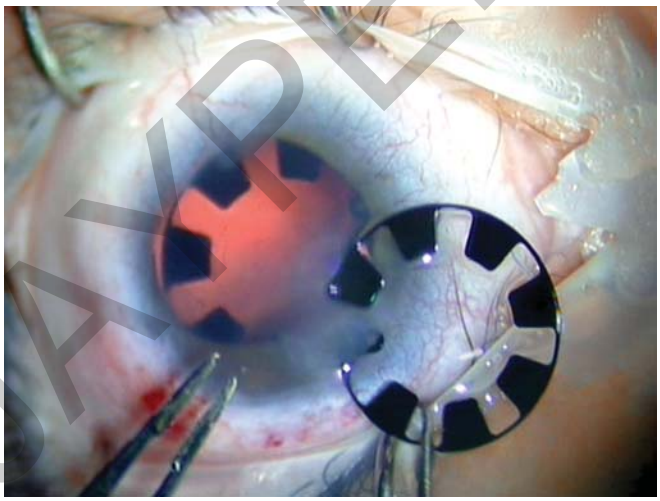


Fig. 19

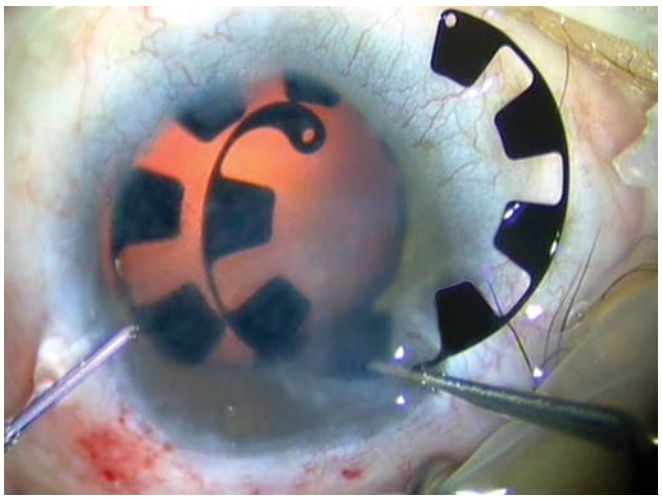


Fig. 20

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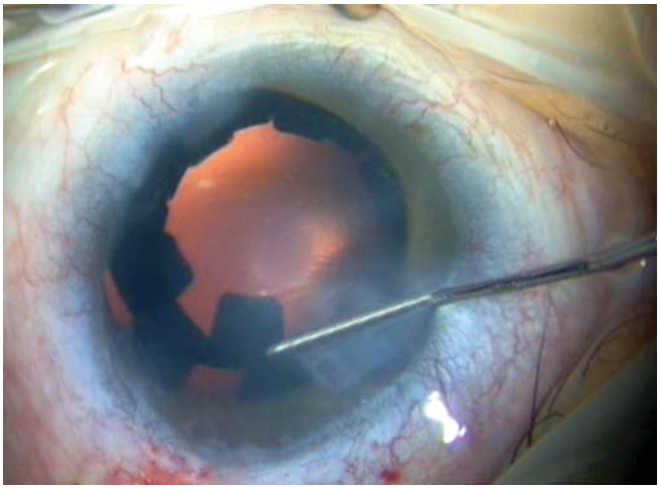


Fig. 21

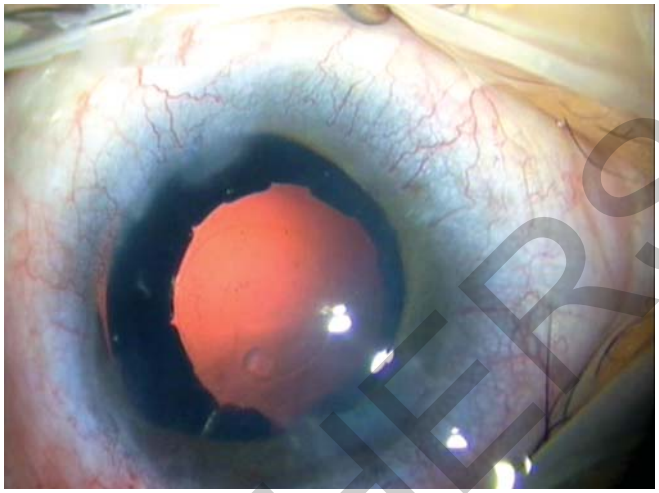
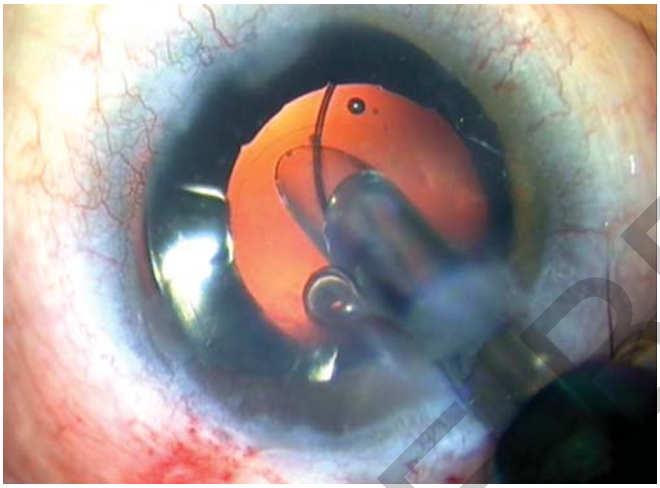
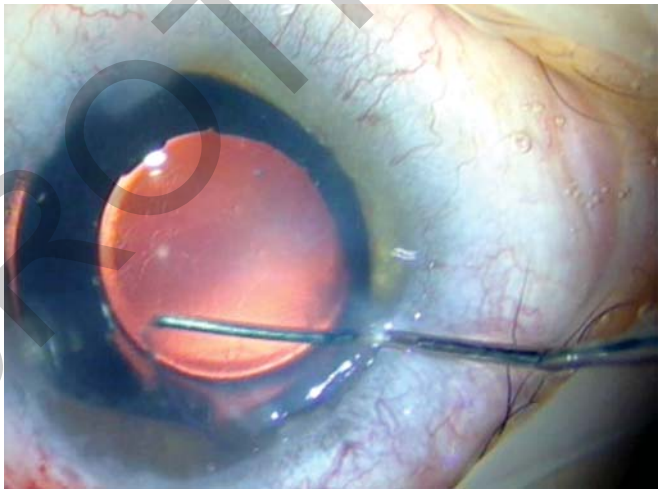


Fig. 22

Figs 19 to 22: The second ring is inserted and dialed to adjust the ring segments to form a complete iris ring





Figs 23 and 24: A 3-piece acrylic intraocular lens is implanted in the bag behind the artificial iris

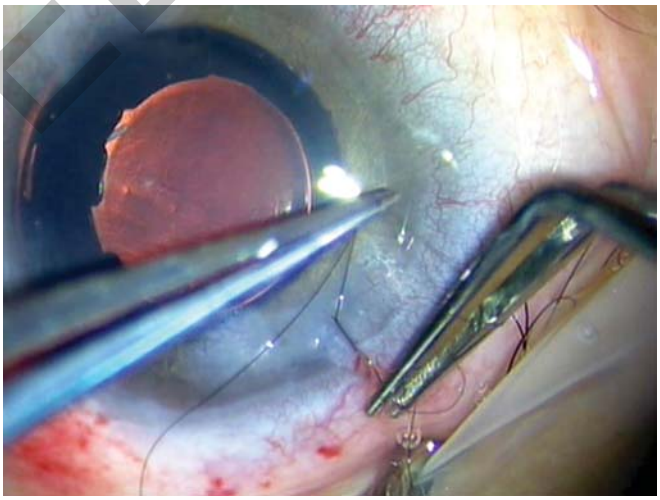
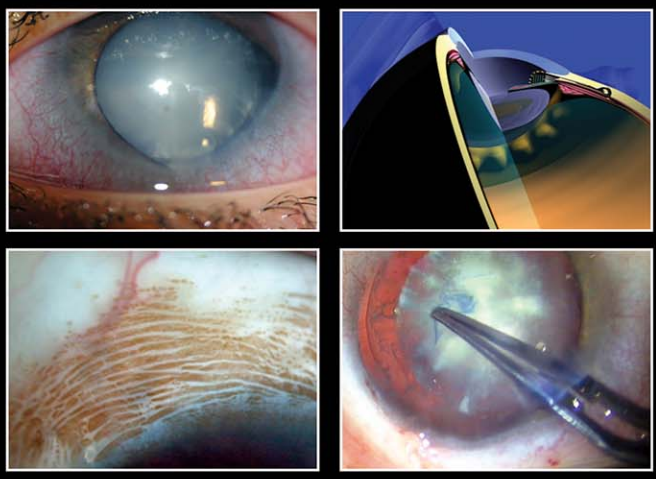


Fig. 25: Cataract wounds secured more and more by one 10/0 suture

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