

3-YEARS POST-OPERATIVE RESULTS OF MODIFIED TRABECULOTOMY IN THE MANAGEMENT OF INFANTS WITH EARLY- ONSET DEVELOPMENTAL GLAUCOMA

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EARLY-ONSET DEVELOPMENTAL GLAUCOMA (EODG) (PRIMARY CONGENITAL GLAUCOMA)

- primary defect in the aqueous filtration system of the eye, developmental, goniodysgenetic
- Estimates of incidence;
 - 1:10,000 births in the West
 - 1:2500 births in the Middle East
 - 1:1250 births among the Slovakian Roms.
- More than 80% present before 1 year

ANATOMICAL CLASSIFICATION

- Isolated trabeculo-Gonio-)dysgenesis
- Iridotrabeculodysgenesis
 - Anterior stromal defects (sturge-weber)
 - Anomalous iris vessels
 - Structural iris defects (aniridia)
- Corneotrabeculodysgenesis
(posterior embryotoxon, Reiger's, Peter's)

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Trabeculotomy has been demonstrated to be one of the main surgical options for managing EODG. In a previous work, we have shown the high success rate of modified trabeculotomy in the short-term management of EODG

TRABECULOTOMY AB EXTERNO

PURPOSE/ STUDY DESIGN

- To evaluate the intermediate term outcome of trabeculotomy in the management of infants with early onset developmental glaucoma
- Retrospective study, consecutive series, single surgeon
- No previous surgery
- No other non-glaucoma associated ocular anomalies
- Primary intervention with modified trabeculotomy using handle-less trabeculotomy probes
- Yearly data from 2-6 years post-op

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PATIENTS DEMOGRAPHICS

- 460 eyes (252 infants) with primary EODG
- 146 males (57.9%), 106 females (42.1%)
- Age: 3 days-21 months (Mean: 3.1 months +/-3.0)
- Caucasian 348 eyes (97.4%, 246 infants), Black African (Nubian) 12 eyes (2.6%, 6 infants)

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PRE-OP CLINICAL DATA

- Mean Pre-op IOP: 29mmHg
- Mean Pre-op C/D ration: 0.55
- Mean Pre-op horizontal corneal diameter: 12.7mm

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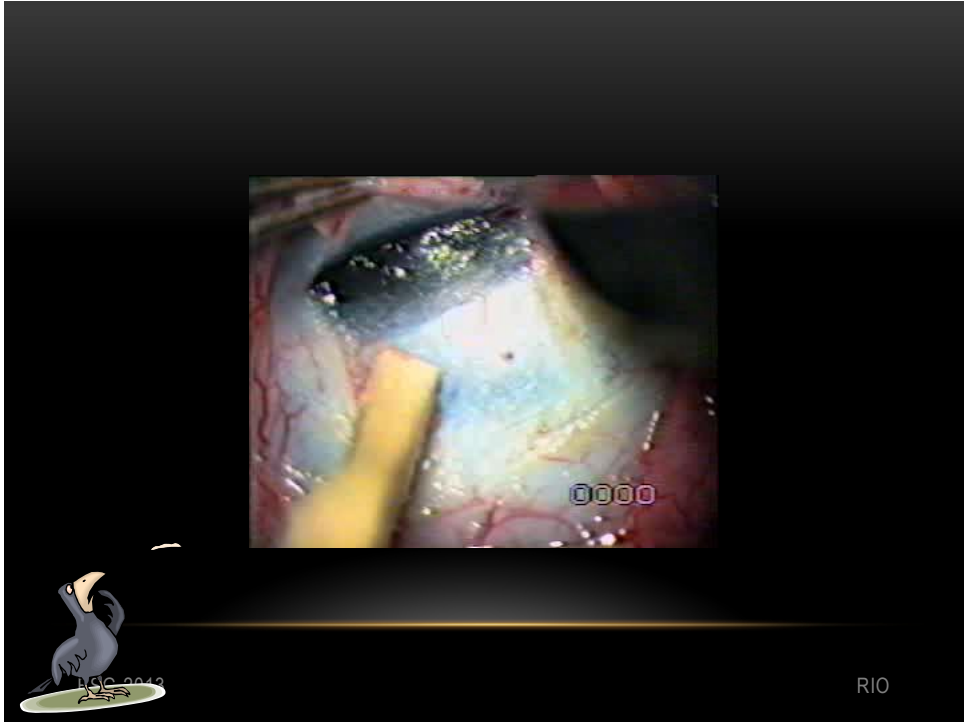
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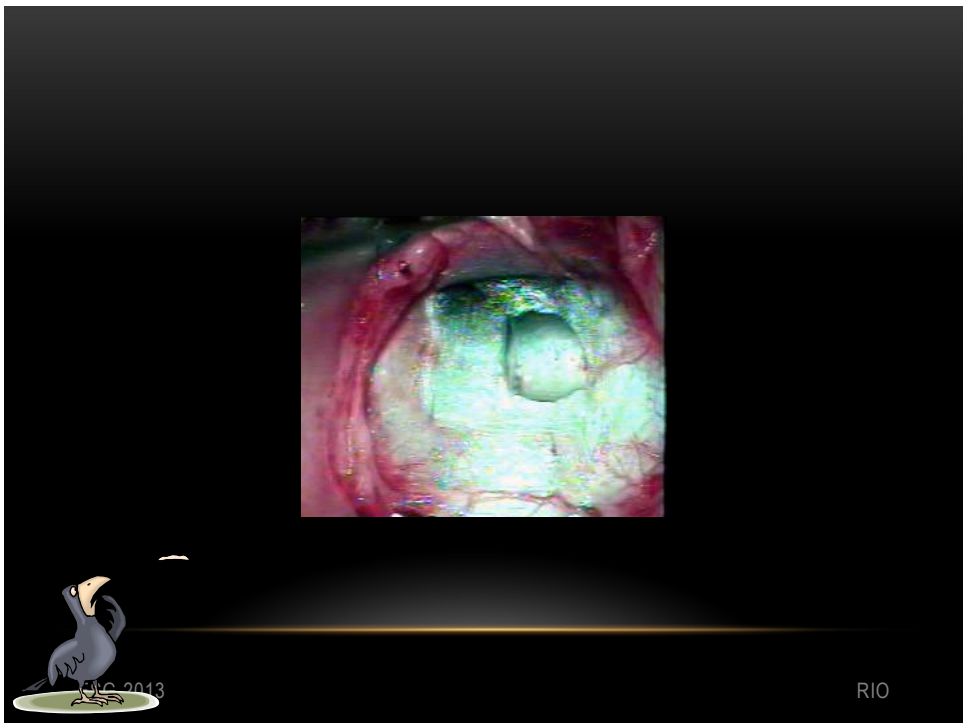
SURGICAL INTERVENTION

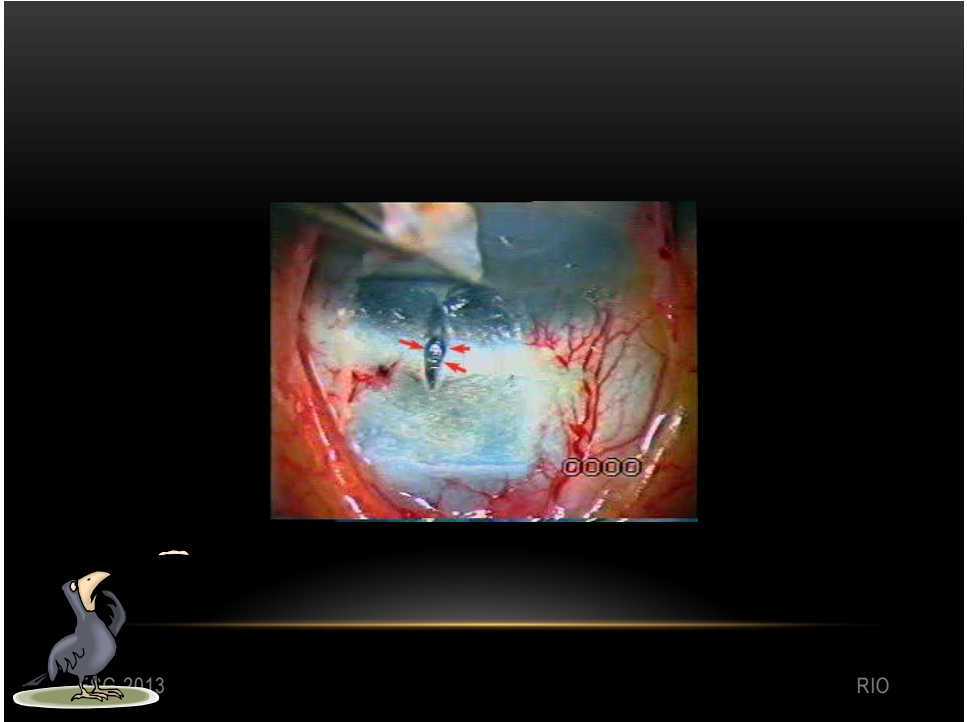
- Limbal based conjunctival incision
- Superficial scleral flap
- Incising Schlemm's canal
- Simultaneous probing of both sides of the canal (90-120 degrees of limbal circumference) with circumference suitable handle-less trabeculotomy probes, followed by their inward rotation into the anterior chamber

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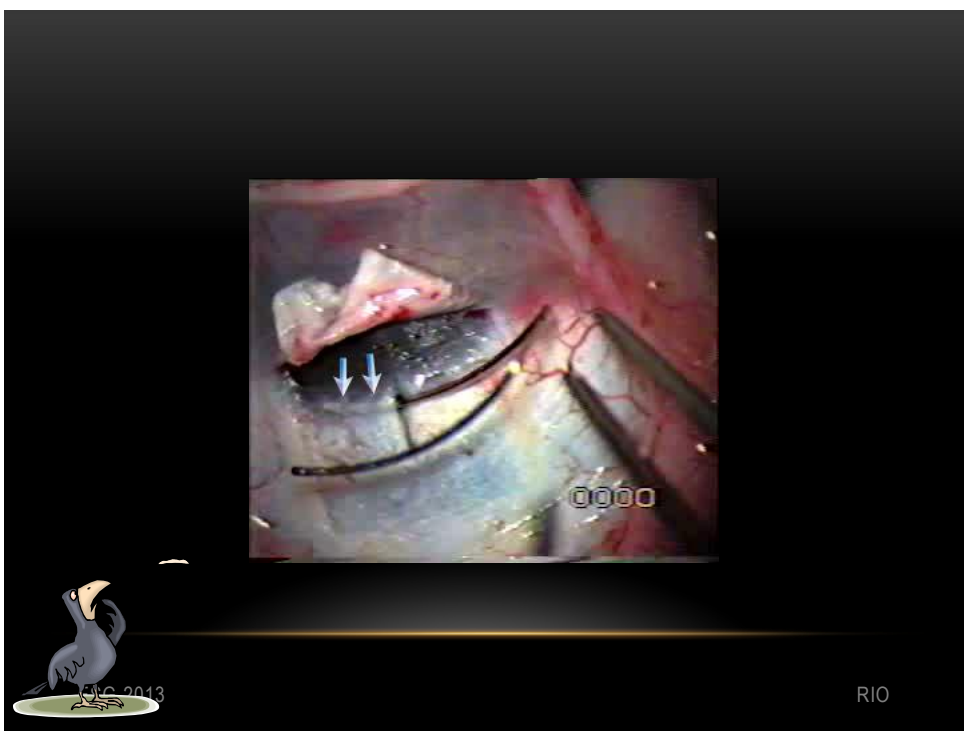
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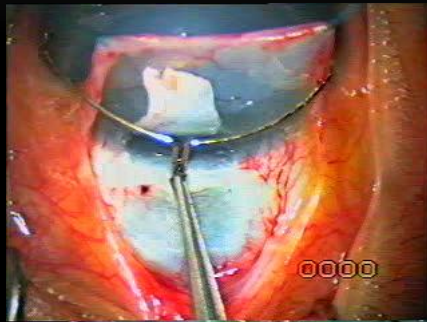
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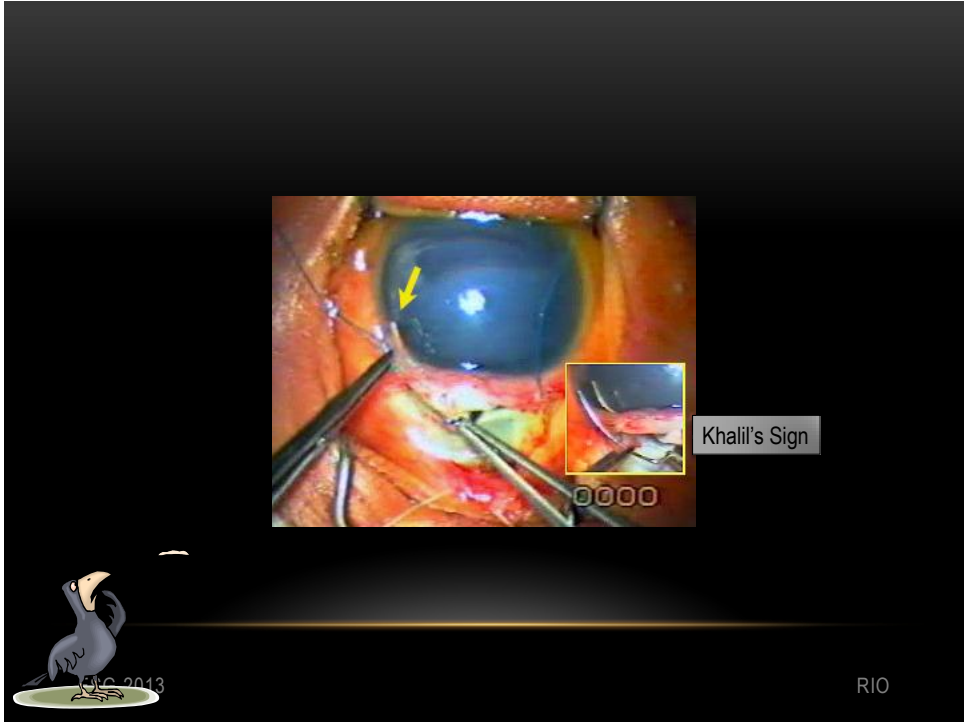
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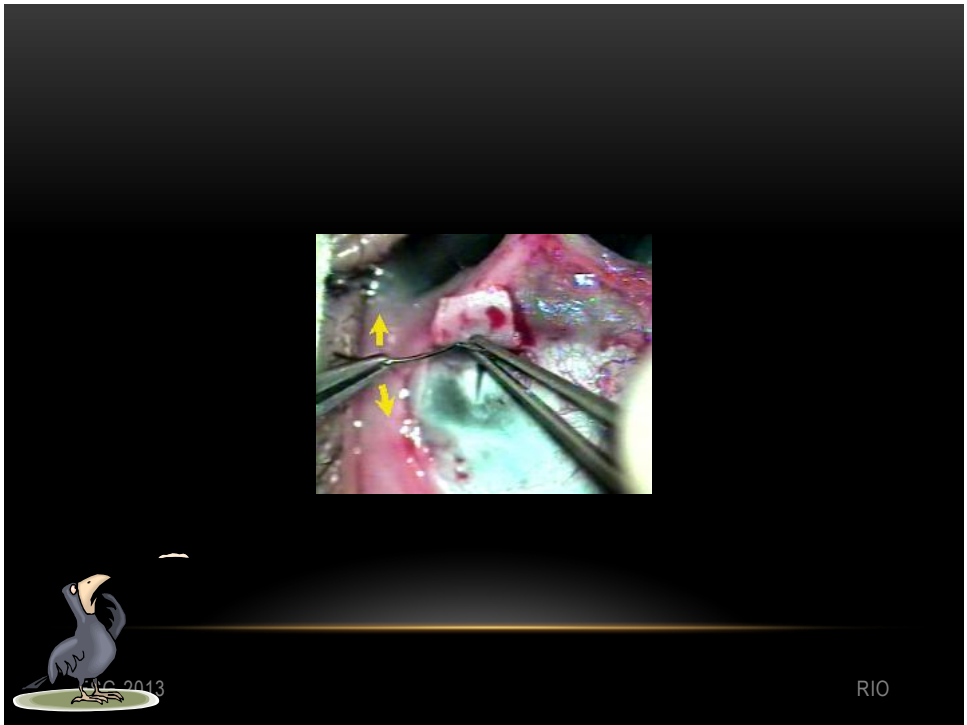
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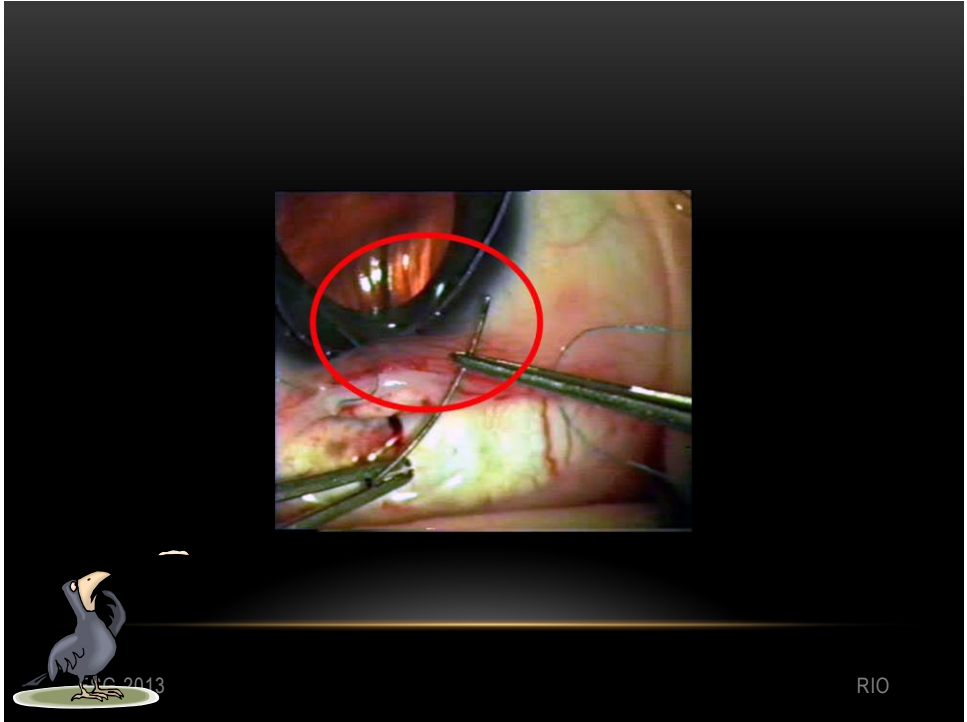
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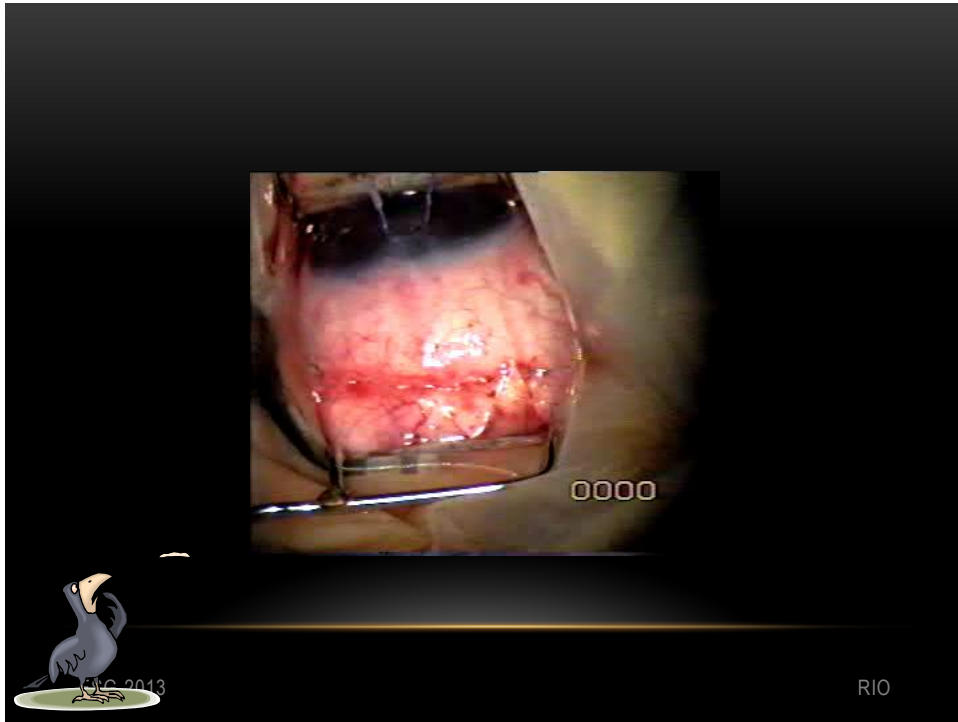


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FOLLOW-UP

- Min 3 years post-op
- 49 cases (19.4%, 81 eyes) were lost to follow up through years 3-6
- Criteria of success: persistence of all the following compared to pre-operative condition:
 - Resolution of corneal edema.
 - Stabilization +/- regression of corneal diameter.
 - IOP (<14 mmHg).
 - Stabilization +/- optic disc cupping.

IOP MEASUREMENT FOLLOW UP



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OPTIC DISC EVALUATION



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RESULTS

- Self-limited hyphema was observed in the first post-operative day in 103 eyes (22.4%) and invariably disappeared in all cases within one week
- IOP was not controlled 6 months postoperatively in 41 eyes (8.9%), and re-operation was deemed necessary in those eyes

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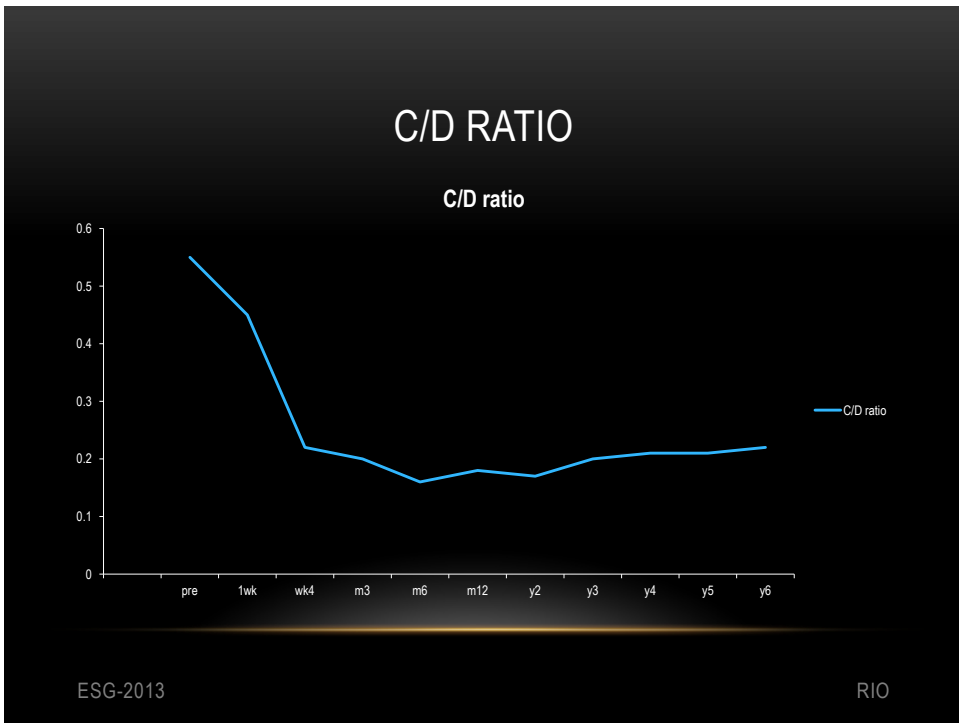
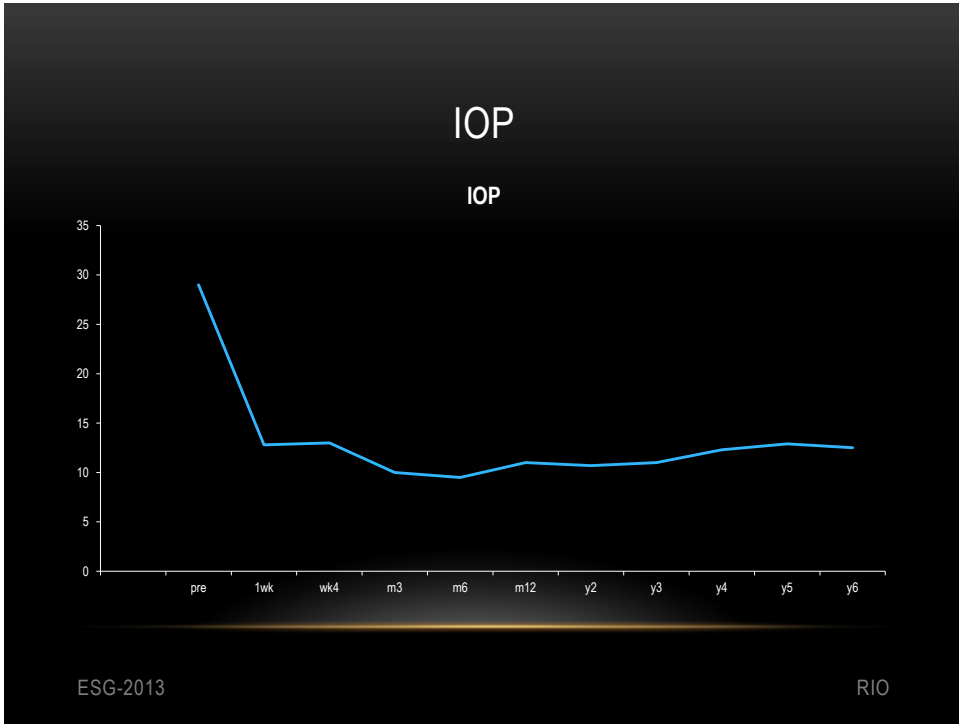
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RESULTS

- A postoperative favorable outcome in all control criteria was observed in 419 eyes (91.1%) 3 years after the surgery. Among these 419 eyes, short term postoperative IOP spikes (>25 mm Hg) in the first few weeks was observed in 43 eyes (10.3%), which was managed by massage +/- temporary topical medications.
- No cases among those who were successfully controlled 6 months after surgery showed any deterioration of the control criteria thereafter throughout the study period

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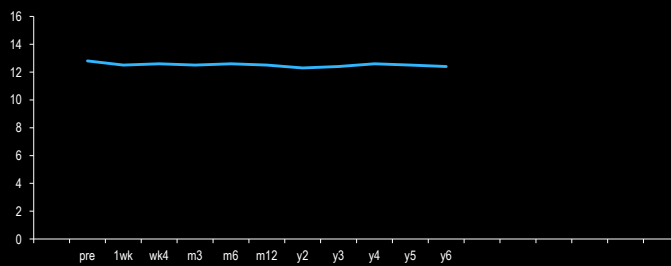


Regression of optic disc cupping was a consistent success criterion, and occurred more readily with earlier diagnosis and surgery

OPTIC DISC CUPPING

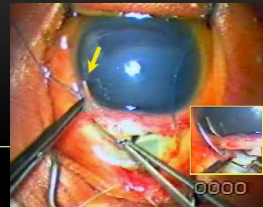
CORNEAL DIAMETER

Corneal Diameter



Apart from a minimal non-significant decrease in corneal diameter in the first 6 months after surgery, no significant change of corneal diameter occurred throughout the study

CORNEAL DIAMETER

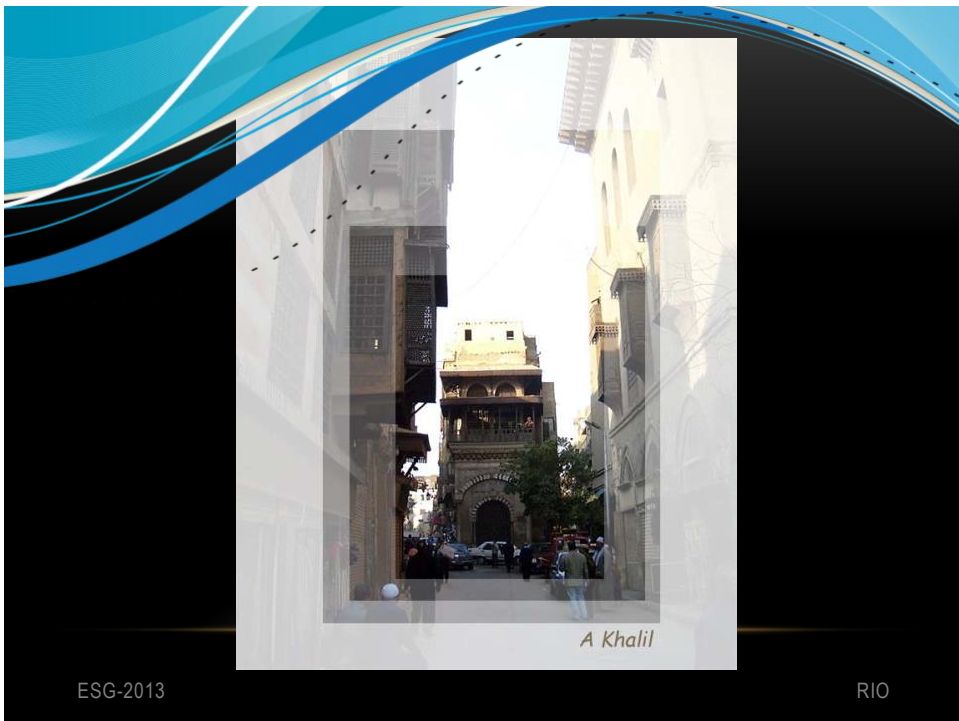


Trabeculotomy directly attacks the defective goniodysgenetic tissues responsible for the decreased aqueous outflow in EODG cases, and establishes a direct connection between the anterior chamber and the Canal of Schlemm.

CONCLUSION

Trabeculotomy is an effective procedure in the management of EODG cases for an intermediate term up to 6 years

CONCLUSION



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