17 TH INTERNATIONAL CONFERENCE OF THE RESEARCH INSTITUTE OF OPHTHALMOLOGY

RIO 2025

Anterior Segment Eye Diseases
Current Status & Future Directions

Preparing For Pediatric Cataract Managment

By

Reham Samir Attia MD,FICO,MRCS(Edinburgh)

Pediatric Ophthalmology and strabismus consultant

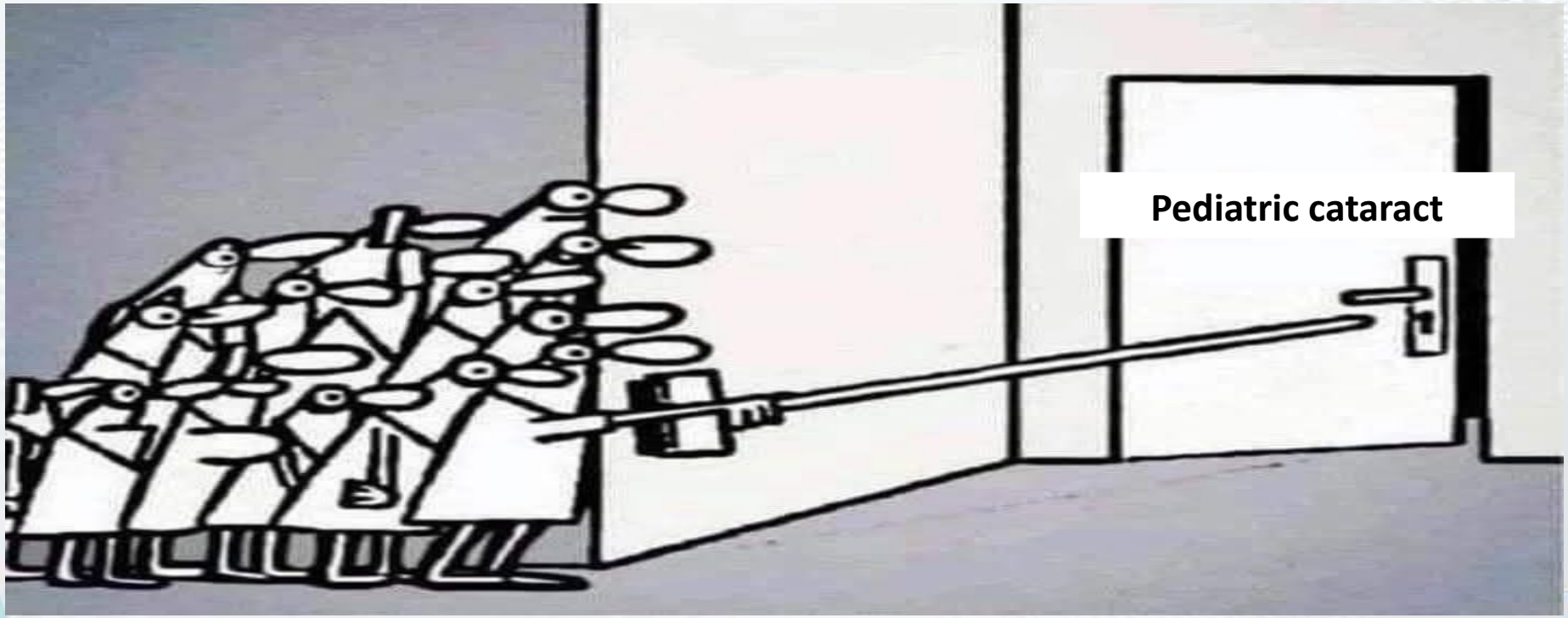
Research Institute of Ophthalmology

Pediatric cataract managment is challenging

Idopathic
Metabolic
Chromosomal
Intrauterine infection

congenital

Traumatic
uveitic



preparation for Pediatric Cataract management

1) *Examination/Investigations*
2) *surgery or not /Time of surgery*
3) *IOL Implantation / Iol preparation*
4) *Preoperative care*
5) *Parent counselling*

1-Examination/Investigations

- **Red reflex(Bruckner test)**
- **VA**

preverbal (Fixation ..Teller acuity card .. Cardiff card)

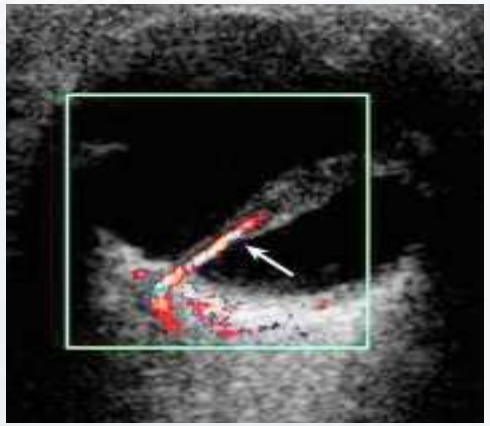
Verbal (age) ..Naming pictures .. Matching pictures .. Snellen .. Landolt chart

- **Anterior segment**
- **Posterior segment**

***Strabismus/ Nystagmus**

Investigations

- VEP,ERG
- Ultrasound (AL/fundus)
- Ultrasound biomicroscopy (UBM)
- Colour Doppler (PFV)



- Serum : TORCH infection
- Urinalysis (galactosaemia)
- Genetic test

2-surgery or not / Time of surgery

- Dense opacity
- 3mm central

↓

Surgery

- less dense
- less than 3mm central
- peripheral opacity

↓

Follow up /refraction correction

- **Time of surgery**

- Unilateral cataract (4-6ws)

- Bilateral cataract (4-10 ws)

3-IOL Implantation / Iol preparation

Pseudophakia

- Normal sized eye
- Quite eye

1ry iol implantation

Aphakia

- Microphthalmia <17mm
- Microcornea <10mm
- Unil <6ms/Bil<2ys
- No iol support
- JIA
- Trauma

2ry iol implantation

IOL preparation

4-Iol (power)

Biometry (K + AL)

- **K Reading**

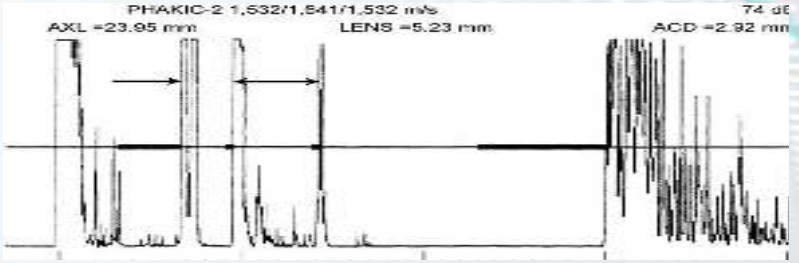
➢Handheld keratometer

➢Optical coherence interferometry (IOL Master..)

- **Axial length**

➢ **Contact**

A scan probe **immersion** technique using **coupling fluid** to prevent **cornea indentation**



➢ **Non contact**

Optical coherence interferometry (IOL Master..)

Formulae

SRK/T .. Holladay .. SRK-II .. Barrett universal ..Hoffer Q ..

IOL (material/types)

- Foldable acrylic hydrophobic IOL (1p/3p)
- Toric IOL (stable corneal curvature)
- Multifocal IOL (contrast senstivity)

Customized IOL which need white to white corneal diameter and mesopic pupil in **small sized eyes** .

Aphakic artisan need proper AC depth(2.8-3.5mm) ,endothelium count and not atrophic iris /uveitis.

Target postoperative refraction

Emmetropia

Undercorrection

- **1- Dahan**

Age	Undercorrection
<2 years	20 %
2 - 8 years	10 %

- **2- Prost**

Age	Undercorrection
1 -2 years	20%
2 - 4 years	15%
4 - 8 years	10%

- **3- Enyedi** (Rule of 7)

  postoperative target according to age

  (Age + Postoperative refraction = 7)

- **Anterior chamber(Aphakic artisan)** undercorrection according to

Age and IOL A constant

➢**Post IOL AC 118.4**

➢**Ant IOL AC 115.7**

4-Preoperative care

- Topical **0.5% Moxifloxacin** or **0.3% tobramycin** 4 times 3 days before surgery.
- **Mydriatic** eye drops/flurbiprofen 0.03% eye drops
- **Atropine** ED 1% in non dilating pupil.
- **Cycloplegic** in **traumatic** and **uveitic** eyes with topical **steriod and antibiotics.**
- **Systemic steriod** in uveitic eyes /3 months quite eye.
- **Topical antiglucoma** in glucoma child **.**

Consultation of **pediatrician** in need in some cases :

- Marfan ,rubella, down… Echo .

- Homocystinuria (thromboembolism) .

Anesthesia consultation (fit for surgery or not).

5-Parent counselling

- **Long term follow up**

➢ **Refraction** correction (contact lens /spectacles *distance/near *)

➢ **Amblyopia** therapy

➢ **IOP**

- **Care before /after surgery** if will be needed /avoiding **trauma** post iol implantation

Take home message

- Pediatric cataract **management** needs **special care**

- Proper **preparations** are important to allow better **visual rehabilitation** ,reduce **operative complications** and **postoperative surprises .**

THANK YOU