



Cataract Theatre Skills

Module 7 IOL Insertion

Welcome to Phaco IA



- ◉ Warren Howell
- ◉ Trainer & Sales in Ophthalmology for 20 Years
- ◉ Please ask questions!
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Today we will learn

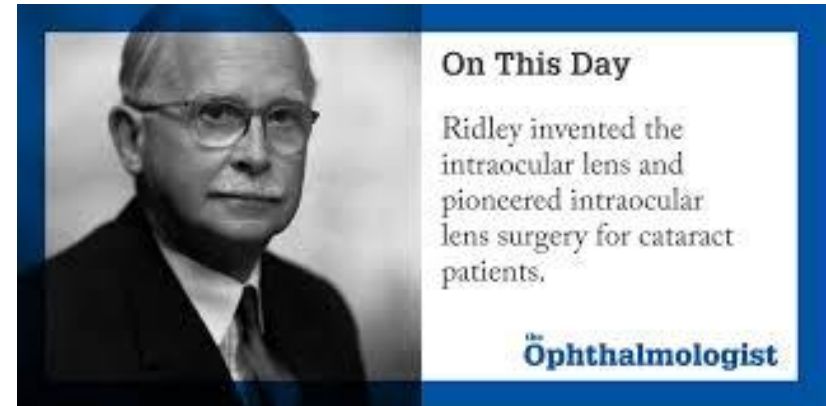


- ◉ IOL History
- ◉ Types of IOL
- ◉ Insertion
- ◉ IOL Preparation
- ◉ Preparation of Capsular Bag
- ◉ Stages of Surgery & Final Checks

Intraocular Lens (IOL) History



- **The IOL was invented by Sir Harold Ridley in 1950**
- Pilots/AirCrew return from the 2nd World War some had Perspex from the screen of their plane, embedded in their eye
- Surprisingly their eye(s) were quiet!
- Ridley had the idea to replace the human crystalline lens with a Perspex type material implant (to become PMMA IOLs)
- The first IOL sat in the sulcus and was 45 times heavier than the IOLs we use today
- Extra Capsular Cataract Extraction (ECCE) was used



Intraocular Lens (IOL) Types



◉ Some popular IOL designs 2019

- ◉ Alcon Acysof IQ
- ◉ Johnson and Johnson - Tecnis
- ◉ Zeiss CT Lucia
- ◉ Bausch & Lomb – EyeCee One
- ◉ Rayner - RayOne
- ◉ Hoya iSert



Almost every manufacturer has an injection system with the majority of IOLs now pre-loaded into the injection system



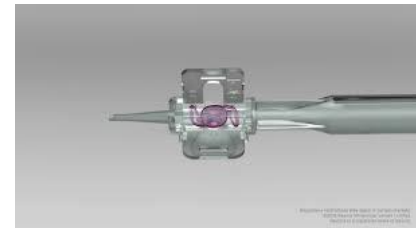
Question Time



IOL Insertion using Injection



- ⦿ **Option 1** – Non Preloaded EG
Accuject by Medical
- ⦿ **Option 2** – Pre Loaded- All the major
suppliers have a Pre Loaded IOL
Injector
 - Alcon Ultrasert
 - Rayner RayOne
 - J&J Tecnis Simplicity



Preparation of IOL & Injector

- Can vary from hospital/clinic - either the Scrub Nurse/Technician and/or Surgeon can prepare it
- As long as they have completed training & been signed off by the relevant supplier
- You will need a syringe of Viscoelastic, as Viscoelastic is the recommended lubricant for most injection systems
- The Surgeon must confirm visually, that the IOL is in the correct orientation & is folded correctly, prior to injection
- Loading of the IOL in the injector, should only occur just prior to the insertion



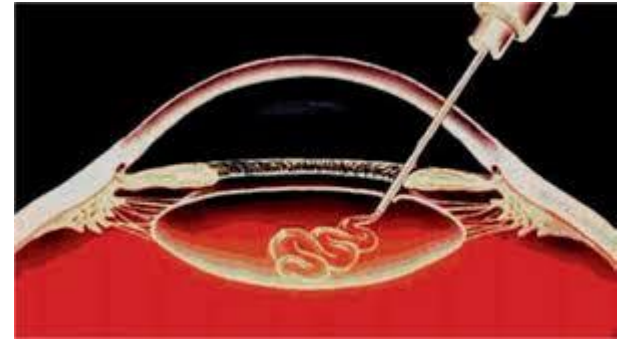
Question Time



Preparation of capsular bag



- The Surgeon will fill the capsular bag with Viscoelastic - in order to open the bag & capsulotomy
- The final IOL loading/positioning in the injector will take place. Then IOL position checked
- An IOL Manipulator (surgeon's choice) will be required
- Also Moorfields Forceps (Conjunctival Forceps) to aid in introducing the injector tip via the main incision.



Question Time

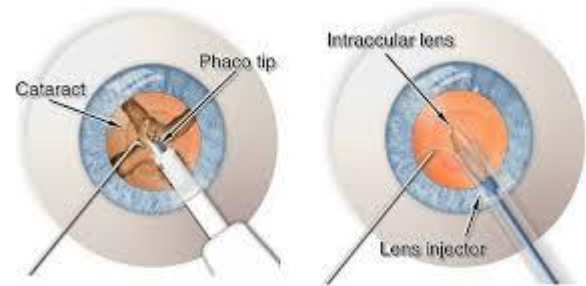


Final Checks



Checking of position of the IOL & patency of the capsular bag

- Once the IOL is in the capsular bag, the surgeon will check it is orientated correctly
- Sitting centrally in the bag
- If it is not the IOL can be manipulated using a Mushroom Manipulator or Blunt Cannula on a syringe of BSS
- The surgeon will also check the capsular bag is still in tact and stable
- No vitreous has leaked into the Anterior Chamber

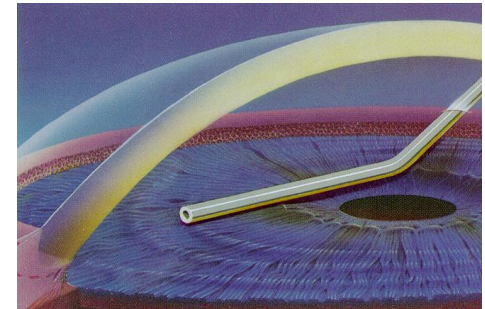
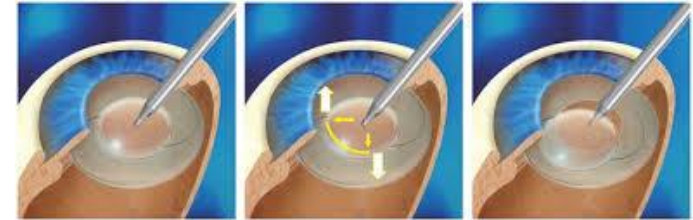


Final Stages of Surgery



Final stages of the surgery the removal of the remaining viscoelastic (OVD) & Re-forming of the Anterior Chamber (AC)

- The phaco system irrigation/aspiration system is used to remove the remaining viscoelastic (OVD) or Simcoe I/A device to carry out this phase
- The Anterior Chamber will be re-formed with aid of a syringe with BSS solution. Check the 'feel' of the AC
- All three incisions will be sealed by injecting a small amount of BSS – Hydration of the tissue.
- Antibiotic Local or Intracameral, Corticosteroid drops or Non steroidal anti inflammatory drops (NSAIDs) may be required
- Once the drape is removed a small dressing and eye shield can be applied to the eye



Question Time



Today we have learnt



- ◉ IOL History
- ◉ IOL Types
- ◉ Insertion
- ◉ IOL Preparation
- ◉ Preparation Bag
- ◉ Stages of Surgery & Final Checks

Thank-you



- ◉ We hope this session was useful
- ◉ Please send us your questions
- ◉ warren@medsalesacademy.co.uk
- ◉ See you on the next module
 - **Complications**