

Instruction Course Title: Managing fluid flow issues during Phacoemulsification

Chief Instructor : Dr. Jayashree Baruah (B1558)

Course Description:

This instruction course will focus on understanding and optimizing phacodynamics and fluidics to safely manage complex cataract cases. The course will cover practical aspects of power modulation, vacuum and aspiration control, and anterior chamber stability in challenging situations such as shallow anterior chamber, small pupil, reverse pupil block, posterior capsular rupture, and post-vitrectomised eyes. Emphasis will be placed on real-world machine parameter adjustments and surgical manoeuvres to prevent complications and improve surgical outcomes.

Course Objective:

This session will provide a practical overview of phacodynamics, with emphasis on recognizing and managing fluidic and phacodynamic challenges in complex cataract surgery through appropriate machine settings and surgical strategies to ensure chamber stability and minimize complications.

Co-instructors and course outline (10 minutes each):

Dr. Gariyashee Lahkar (G23842)

Topic: Mastering the Phacodynamics

Email: gariyasheel@gmail.com

Dr. Nilanjan Kaushik Thakur (N08713)

Topic: Managing Fluidics in Shallow Anterior Chamber

Email: nilanjanthakur@gmail.com

Dr. Haimanti Choudhury (C10327)

Topic: Challenges in Small Pupil

Email: drhaimanti@gmail.com

Dr. Swaraj Bhattacharjee (B05411)

Topic: Dealing with Reverse Pupil Block

Email: drswaraj@gmail.com

Dr. Jayashree Baruah (B11558)

Topic: Flow Issues after Posterior Capsular Rupture

Email: julie_ghy@yahoo.co.in

Dr. Manas Nath (M17683)

Topic: Role of Fluidics in Post-Vitrectomised Eyes

Email: drmanasnath@gmail.com

Course Duration : 75 Minutes *(Including 15 minutes Panel Discussion)*

Format : Didactic Lectures followed by Panel Discussion

Dr. Gariyashee Lahkar (G23842)
Topic: Mastering the Phacodynamics

- Fundamentals of phacodynamics: power, vacuum, aspiration flow rate
- Ultrasound modalities: longitudinal vs torsional
- Relationship between vacuum, flow rate, and followability
- Surge: causes, prevention, and machine adjustments
- Optimizing phaco settings for:
 - Soft nuclei
 - Hard/brunescent cataracts
- Impact of phacodynamics on endothelial safety
- Customizing parameters based on nucleus density and surgical step

Dr. Nilanjan Kaushik Thakur (N08713)
Topic: Managing Fluidics in Shallow Anterior Chamber

- Causes of shallow AC
- Challenges in shallow AC
- Role of bottle height / IOP modulation
- Intraoperative signs of impending chamber collapse
- Preventing endothelial damage in shallow AC eyes

Dr. Haimanti Choudhury (C10327)
Topic: Challenges in Small Pupil

- Etiology of small pupil in cataract surgery
- Phaco parameter modification in cases with small pupil
- Use of OVDs
- Mechanical pupil expansion devices
- Management of floppy iris

Dr. Swaraj Bhattacharjee (B05411)
Topic: Dealing with Reverse Pupil Block

- Pathophysiology of reverse pupil block
- Role of fluidics and pressure gradients
- Intraoperative signs: sudden deepening of AC, pupil dilation
- Preventive strategies
- Immediate intraoperative management techniques
- Adjustment of phaco parameters

Dr. Jayashree Baruah (B11558)
Topic: Flow Issues after Posterior Capsular Rupture (PCR)

- Altered fluidics following PCR
- Immediate machine setting modifications after PCR
- Possible secondary complications
- Management of PCR
- Role of anterior vitrectomy
- Prevention of vitreous traction and retinal complications
- Safe nucleus and cortex removal strategies
- Maintaining chamber stability during IOL implantation

Dr. Manas Nath (M17683)
Topic: Role of Fluidics in Post-Vitrectomised Eyes

- Challenges in vitrectomised eyes
- Management of chamber fluctuations
- Modification of phaco parameters
- Strategies to prevent surge in post-vitrectomy cases
- Key intraoperative precautions and pearls