

Where all of ophthalmology meets

AAO 2014

In conjunction with SOE

ENGAGE!
Chicago

AAO 2014

October 18–21

Subspecialty Day

October 17–18

AAOE Program

October 18–21

**FINAL
PROGRAM**

www.aao.org/2014  [#aao2014](https://twitter.com/aao2014)

The American Academy of Ophthalmology is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

 **AMERICAN ACADEMY[®]
OF OPHTHALMOLOGY**
The Eye M.D. Association



Scientific Posters

Scientific Poster 588

SOE Inverted Internal Limiting Membrane Flap Technique vs. Standard Internal Limiting Membrane Flap Technique for Large Macular Holes

Presenting Author: Ligia M Figueiredo MD

Co-Author(s): Ligia M Ribeiro MD, Miguel Afonso Almeida Pinto Bilhota

Purpose: To compare the functional and anatomic outcomes of a standard internal limiting membrane (ILM) flap technique with a modified inverted ILM flap technique for large macular holes. **Methods:** Retrospective, nonrandomized, comparative study. Twenty eyes with macular holes larger than 400 µm were included. In Group 1, 13 eyes underwent ILM peeling. In Group 2, seven eyes underwent the inverted flap technique. **Results:** Best-corrected visual acuity three months after surgery improved from 0.067 to 0.223 decimal equivalent (DE) in Group 1 and from 0.084 to 0.286 DE in Group 2 ($P < 0.05$). Macular hole closure was observed in 54% of patients in Group 1 and 100% of patients in Group 2. A flat-open hole was observed in 38.5% of patients in Group 1 ($P < 0.05$). **Conclusion:** The inverted ILM flap technique seems to be an effective surgical treatment for large macular holes.

Scientific Poster 589

Macular Hole Surgery Sans Gas Tamponade

Presenting Author: Meena Chakrabarti MBBS

Co-Author(s): Arup Chakrabarti MBBS

Purpose: To study whether gas tamponade was necessary to improve anatomic and functional outcomes in macular hole surgery (MHS). **Methods:** Retrospective analysis of 100 patients who underwent MHS with internal limiting membrane (ILM) peeling and with intraoperative gas tamponade (50 eyes) and without gas tamponade (50 eyes). A comparative analysis of hole closure rate, vision, and complications in both groups was performed. **Results:** Hole closure rate was 92% (<400 µm) versus 72% (>400 µm) in both groups. Complications such as retinal tears (5%), retinal detachment (2%), retinal pigment epithelium degeneration (16%), and epiretinal membrane (5%) were similar in both groups. A higher incidence of cataract (40% vs. 8%) was seen in Group 1. Final vision recovery of >6/60 (60%) was achieved in both groups. **Conclusion:** The anatomic and functional outcomes in MHS are similar, irrespective of whether intraoperative gas tamponade was used or not.

Scientific Poster 590

Structural and Visual Outcomes After Epimacular Membrane Surgery With Internal Limiting Membrane Peeling

Presenting Author: Meena Chakrabarti MBBS

Co-Author(s): Arup Chakrabarti MBBS

Purpose: To study the long-term visual outcome and macular structural changes in 130 consecutive patients who have undergone epimacular membrane surgery with internal limiting membrane peeling. **Methods:** Retrospective review of the visual outcome and OCT changes at one, three, six, and 12 months postoperatively. **Results:** Visual acuity improvement at six months (>6/9) decreased by two lines (<6/18) at 12 months in 80%. Recurrence (5%), macular hole (3%), and peripapillary retinal nerve fiber layer (RNFL) thinning was observed. RNFL thinning in superotemporal, inferotemporal, and temporal quadrants (150.6 ± 19 µm vs. 165.7 ± 23.4 µm [$P < 0.001$], 125.3 ± 24.8 µm vs. 136.22 ± 7.2 µm [$P < 0.05$], and 70.2 ± 17.4 µm vs. 98.5 ± 23.7 µm [$P < 0.001$]) was statistically significant. **Conclusion:** A statistically significant decrease in RNFL thickness was observed at 12 months follow-up.

Scientific Poster 591

SOE Geometry, Penetration Force and Cutting Profile of Different 23-Gauge Trocars Systems for Pars Plana Vitrectomy

Presenting Author: Carsten H Meyer III MD

Co-Author(s): Zengping Liu MD**, Sandeep Saxena MBBS MS, Hakan Kaymak MD**, Eduardo B Rodrigues MD*

Purpose: To examine 11 23-G trocar systems (spear, back, lancet bevel, and spatula bevel). **Methods:** Normative geometrical data were analyzed (ISO 7864 and ISO 9626). A penetrometer measured the piercing, cutting, and sliding and plotted a load displacement diagram. **Results:** The mean outer diameter was 0.630 ± 0.009 mm, the point length was 3.11 ± 0.4 mm, the bevel length was 1.46 ± 0.2 mm, the primary angle was 10.75 ± 0.4°, and the secondary angle was 65.9 ± 42.56°. The piercing forces of back and spear were 0.087 ± 0.028 Newton (N), and the lancet was 0.41 N (0.35–0.47), but the spatula was 1.6 N (1.59–1.73). The back bevel induced a triangular shape, the spear a linear, the lancet a straight, and the spatula accurate incisions. **Conclusion:** Lancet and back systems show less penetration force than the spatula systems.

Scientific Poster 592

To Evaluate the Effect of Vitreous Surgery on Corneal Endothelium

Presenting Author: Shorya V Azad MBBS**

Co-Author(s): Brijesh Takkar**, Amit Jain MBBS MS**, Kumar Vivek Sr, Raj V Azad MD FRCS(ED)**

Purpose: To evaluate the effect of vitreous surgery on corneal endothelium. **Methods:** One hundred thirteen eyes undergoing pars plana vitrectomy for variable indications were included prospectively. Specular count was noted preoperatively and on postoperative day 1, 30, 90, and 180. Percentage and rate of endothelial loss were measured. **Results:** We found that 7.6% of endothelial cells were lost at postoperative day 1. This rate had decreased to 2.5% in the first 30 days, 1.5% between day 30 and 90 and 1.4% between day 90 and 180. Significant difference in endothelial loss was noted on day 1 between phakic, pseudophakic, and aphakic eyes at 7.2%, 6.4%, and 11.4%, respectively. **Conclusion:** Precautions should be taken in aphakics and patients requiring anterior segment manipulation. Endophthalmodiodesis in aphakic vitrectomized eyes may be a serious concern.

Scientific Poster 593

Brilliant Blue Staining Using Whole Blood vs. Conventional Brilliant Blue Staining in Macular Hole Surgery

Presenting Author: Supriya Batta MS

Co-Author(s): Neha Goel MBBS**, Nalini Saxena MBBS, Richa Pyare MBBS**, Usha K Raina MD, Meenakshi Thakar**, Basudeb Ghosh**

Purpose: To compare the outcome of sequential intraoperative use of autologous heparinized whole blood (WB) followed by brilliant blue (BB) versus conventional BB staining for internal limiting membrane (ILM) peeling in macular hole surgery. **Methods:** This randomized, controlled trial included 30 patients in each group. Clinical examination and spectral-domain OCT were done at three, six, and 16 weeks and six months postoperatively. **Results:** Group A (BB staining using WB) had a higher mean best-corrected visual acuity at all postoperative visits ($P < 0.001$, 0.001, 0.004, and 0.04, respectively) compared with Group B (conventional BB staining). **Conclusion:** Use of WB prior to staining ILM with BB improves functional outcome of surgery.

Scientific Poster 594

Tomographic Features of the Fovea After Foveola-Nonpeeling Macular Hole Surgery

Presenting Author: Tzzy-Chang Ho MD

Purpose: To study the tomographic features after foveolar internal limiting membrane (ILM) nonpeeling surgery in stage 2 macular hole. **Methods:** The patients were divided into two groups (14 eyes in each group) by the extent of peeling: preservation in Group 1 and total peeling in Group 2. **Results:** There was more improvement of logMAR best-corrected visual acuity in Group 1 than in Group 2. Regain of inner segment/outer segment line in all eyes in Group 1 (100%) and in seven eyes in Group 2 (50%). Recovered external limiting membrane lines were found in all eyes in Group 1 (100%) and in eight eyes in Group 2 (57%). Group 1 eyes restored umbo reflex and smooth and symmetric foveolar contour without postoperative inner retinal dimpling. **Conclusion:** Nonpeeling of the foveolar ILM restored better foveolar microstructures and achieved more visual acuity improvement.

Scientific Poster 595

Anatomical and Visual Outcomes of Vitreoretinal Surgery in Pediatric Retinal Detachments

Presenting Author: Yog Raj Sharma MD MBBS

Co-Author(s): Abdul Shameer MBBS, Raj V Azad MD FRCS(ED)**, Pradeep Venkatesh**, Parijat Chandra MD, Koushik Tripathy MD MBBS

Purpose: To study outcomes of vitreoretinal surgery (VRSx) in pediatric retinal detachments (RDs). **Methods:** Prospective case series. Three hundred twenty-two eyes of 308 children (≤14 years of age) undergoing VRSx with silicone oil injection (23 or 25 G) were studied, excluding retinopathy of prematurity cases. **Results:** Mean age was 10.7 ± 2.6 years. Two hundred nineteen patients (71.1%) were boys. Forty-six patients (14.9%) had bilateral RD. The most common cause was trauma in 135 eyes (41.9%). One hundred eighty-six eyes (57.7%) had proliferative vitreoretinopathy. At six months, 287 eyes (89.1%) achieved retinal reattachment. Visual acuity was ≥20/200 in six eyes preoperatively and in 96 eyes at six months ($P < 0.001$) of the 307 eyes in which visual acuity could be measured. **Conclusion:** The anatomical outcomes of pediatric VRSx are good; however, visual recovery remains modest.