RETINA ROUNDUP

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1. Retina 44(9):p 1538-1545, September 2024. | DOI: 10.1097/IAE.0000000000004147

ANATOMIC OUTCOMES OF LENS-SPARING VITRECTOMY FOR STAGE 3 OR 4 FAMILIAL EXUDATIVE VITREORETINOPATHY

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Purpose

To report the anatomic outcomes and retinal structure changes from lens-sparing vitrectomy (LSV) for eyes with Stage 3 or 4 familial exudative vitreoretinopathy (FEVR).

Methods

Overall, 133 consecutive eyes of 119 patients with Stage 3 (51 eyes) or 4 (82 eyes) FEVR who underwent LSV between January 2012 and May 2023 were retrospectively reviewed.

Results

One hundred twenty-nine eyes (97.0%) achieved traction relief through one LSV operation. The extent of retinal detachment improved in 98 eyes (73.7%), remained stable in 32 eyes (24.1%), and progressed in three eyes (2.3%). At long-term follow-up, 39 (29.3%) and 60 (45.1%) eyes had completely or partially reattached retina, respectively. The median change of venular angle was 3.6° (95% CI, 3.5–10.5; $P < 0.001$) and −9.9° (95% CI, −15.8 to −4.6; $P < 0.001$) for temporal and nasal vessels, respectively. The mean disk–fovea distance was 0.3 papillary diameter shorter (95% CI, −0.4 to −0.2; $P < 0.001$), and the mean temporal venular arcade distance was 0.02 papillary diameter larger (95% CI, −0.16 to 0.21; $P = 0.361$).

Conclusion

These results suggest that LSV can relieve vitreoretinal traction and reattach the retina in late-stage FEVR eyes. Improvements in temporal and nasal venular angle and disk–fovea distance reflect positive retinal structure changes for patients.

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2. Retina 44(9):p 1546-1551, September 2024. | DOI: 10.1097/IAE.0000000000004148

VISION AND METAMORPHOPSIA OUTCOMES OF MACULAR BUCKLING FOR FOVEOSCHISIS-ASSOCIATED MACULAR DETACHMENT IN HIGHLY MYOPIC EYES

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Purpose:
To assess the functional outcomes in visual acuity, metamorphopsia, and vision-related quality of life (VR-QOL) and to evaluate prognostic factors after macular buckling (MB) surgery in eyes with high myopia and foveoschisis (FS)-associated macular detachment (MD).

Methods:
Thirty-nine eyes of 39 patients with FS-associated MD who underwent MB surgery were enrolled. Measured outcomes comprised best-corrected visual acuity (BCVA), metamorphopsia, VR-QOL, axial length (AL), macular reattachment, and resolution of foveoschisis. In addition, factors affecting final BCVA and metamorphopsia were analyzed.

Results:
At 12 months postoperatively, 36 eyes (92.31%) achieved macular reattachment, 37 eyes (94.87%) achieved complete resolution of foveoschisis, and metamorphopsia diminished in 31 eyes (79.49%). LogMAR BCVAs at baseline and months 1, 3, 6, and 12 postoperatively were 0.62 ± 0.35 (20/83), 0.65 ± 0.3 (20/89), 0.59 ± 0.31 (20/77), 0.54 ± 0.31 (20/69), and 0.46 ± 0.27 (20/57) ($P < 0.001$), respectively. Metamorphopsia scores by M-CHARTS were 1.36° ± 0.51°, 1.04° ± 0.51°, 0.74° ± 0.47°, 0.59° ± 0.47°, and 0.13° ± 0.29° ($P < 0.001$). All Visual Function Questionnaire-25 subscales demonstrated significant improvement postoperatively, with the exception of "general health" ($P = 0.08$) and "driving" ($P = 0.111$). Preoperative BCVA was an independent risk factor for postoperative BCVA at month 12 (r = 0.638, $P < 0.001$), and the preoperative M-score was an independent risk factor for postoperative M-score at month 12 (r = 0.187, $P = 0.045$).

Conclusion:
MB surgery significantly improved BCVA, metamorphopsia, and VR-QOL in patients with FS-associated MD. Preoperative BCVA and metamorphopsia score were prognostic factors for postoperative BCVA and metamorphopsia score at month 12.

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3. **Retina 44(9):p 1552-1559, September 2024. | DOI: 10.1097/IAE.0000000000004142.**

PEDICLE TRANSPOSITION FLAP, INVERTED FLAP, FREE FLAP, AND STANDARD PEEL FOR LARGE FULL-THICKNESS MACULAR HOLES-A Comparative Study

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Purpose

To compare anatomical and functional outcomes of four different techniques for the treatment of large idiopathic full-thickness macular holes.

Methods

This single-center retrospective study included 129 eyes of 126 patients with large (>500 μm) full-thickness macular holes who presented between January 2018 and October 2022. All patients underwent 23/25 G vitrectomy and gas with standard internal limiting membrane (ILM) peel, pedicle transposition, inverted, or free flap technique. Postoperative optical coherence tomography images were assessed by two independent masked graders.

Results

Mean age was 73.2 years (SD 8.4) with a median F/U of 5 months (IQR 8). The overall anatomical success rate was 81%; it was significantly lower (59%) for the standard ILM peel ($P < 0.0001$). The pedicle transposition flap showed superior visual recovery compared with the free flap (+27 vs. +12 ETDRS letters, $P = 0.02$). At 3 months, restoration of the external limiting membrane was significantly better for the pedicle transposition flap compared with free flap and standard ILM peel ($P = 0.008$ and $P = 0.03$) and superior to all the other techniques at 6 months ($P = 0.02$, $P = 0.04$, and $P = 0.006$).

Conclusions

Standard ILM peel alone offers inferior outcomes for the management of large full-thickness macular holes. Of the alternative ILM techniques, despite similar closure rates, foveal microstructural recovery is most complete following the pedicle transposition flap and least complete following the free flap.

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4.Retina ():10.1097/IAE.0000000000004231, August 23, 2024. | DOI: 10.1097/IAE.0000000000004231

CHARACTERISTICS OF 'NOTCH' IN RETINOPATHY OF PREMATURITY FOLLOWING INTRAVITREAL RANIBIZUMAB MONOTHERAPY

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Purpose:

To explore the clinical features and significance of "notch" in reactivation of retinopathy of prematurity (ROP) post-intravitreal ranibizumab (IVR) monotherapy.

Methods:

Ninety-six infants (173 eyes) with type 1 or aggressive ROP (A-ROP) post-IVR monotherapy were retrospectively analyzed; 51 eyes were notch (+) and 122 eyes were notch (−). General demographics and clinical outcomes were compared by notch status for type 1 and A-ROP.

Results:

The notch primarily appeared in stage 2 ROP (84.4 and 78.9%) at the junction of zones I and II (68.8 and 63.2%) on the temporal side in type 1 ROP and A-ROP. Notch was present in the type 1 ROP group before first IVR but post-treatment in the A-ROP group. A significantly higher reactivation rate, longer follow-up duration, and postmenstrual age at last follow-up were seen in the notch (+) versus the notch (−) group. In the notch (+) ROP group, the mean gestational age (28.34±0.93 vs. 29.94±1.48 weeks) was significantly lower in reactivated versus regressed eyes.

Conclusion:

Notches appeared at different times but similar locations in type 1 ROP and A-ROP. The reactivation rate after IVR was increased in ROP with notches. Notch may be a useful biomarker for reactivation after IVR in ROP.

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5.Retina ():10.1097/IAE.0000000000004221, August 09, 2024. | DOI: 10.1097/IAE.0000000000004221

THE MINI-STEAMROLL: AN ABBREVIATED VARIATION OF THE STEAMROLLER MANEUVER FOLLOWING PNEUMATIC RETINOPEXY FOR RHEGMATOGENOUS RETINAL DETACHMENT

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Purpose

To describe a novel positioning maneuver for patients with rhegmatogenous retinal detachment (RRD) following pneumatic retinopexy(PnR).

Methods

Single-center prospective case series of primary RRDs referred to St. Michael's Hospital, Toronto, Canada, between 2021 and 2023. All patients underwent PnR. Baseline ultra-widefield fundus imaging and repeat imaging 10 minutes after the gas injection was performed. After PnR, patients were instructed to perform the mini-steamroll maneuver which consists of a face-down position for ten minutes followed by positioning to the retinal break. The reduction of subretinal fluid (SRF) volume after the initial face-down position was evaluated with clinical examination and ultra-widefield imaging.

Results

Six patients who presented with primary bullous RRD and a sizable superior break were enrolled. The mini-steamroll maneuver resulted in a rapid and significant reduction of SRF in all patients with bullous RRD and large superior breaks, allowing subretinal fluid to be expressed into the vitreous cavity with 10 minutes of face-down positioning. One patient required a sequential PnR. Primary retinal reattachment was achieved in all cases .This approach was well-tolerated by patients.

Conclusion

This case series demonstrates that the mini-steamroll maneuver may be a suitable alternative for patient positioning following PnR in certain cases. The mini-steamroll is a simpler positioning regimen with the potential benefits of direct-to-break and full steamroller maneuver.

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6.Retina ():10.1097/IAE.0000000000004238, August 09, 2024. | DOI: 10.1097/IAE.0000000000004238

A NOVEL AUTOMATED ASPIRATION OF SUBRETINAL FLUID METHOD DURING SCLERAL BUCKLING FOR RHEGMATOGENOUS RETINAL DETACHMENT

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Purpose:
The goal of the study is to introduce a modified technique for the removal of subretinal fluid during scleral buckling (SB) to treat rhegmatogenous retinal detachment (RRD).

Methods:
This case series study was comprised of 18 cases of RRD patients suffering from a novel automated aspiration of subretinal fluid method during SB. The cases took place from July 2023 to November 2023 at the First Affiliated Hospital of USTC. Preoperative and intraoperative situations were evaluated, and spectral-domain optical coherence (SDOCT) and scanning laser ophthalmoscopy were used to observe the absorption of SRF in the early postoperative period.

Results:
The SRF method's automated aspiration primarily eliminated the SRF of all 18 RRD cases during SB surgery, leading to retinal reattachment, as showed by SLO. The method did not cause extensive intraoperative hemorrhage and had no risk of retinal incarceration or other complications. The SDOCT showed that the height of SRF in the macular area decreased in 10 cases (66.67%), leaving just a thin layer; was completely cleared in two cases (13.33%); had just a macular single bleb in one case (6.67%); and had several blebs left in two cases (13.33%).

Conclusions:
These findings suggest that the automated aspiration of the SRF method is effective, controllable, and beneficial for retinal reattachment, especially in the early postoperative period. Complications with this method were rare.

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