

Outcomes of 25-gauge pars plana vitrectomy with encircling scleral band for acute retinal necrosis-related rhegmatogenous retinal detachment

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Purpose: The aim of this study was to evaluate the anatomic and functional outcomes of 25-gauge pars plana vitrectomy (25G PPV) with encircling scleral band (ESB) in patients with acute retinal necrosis (ARN)-related rhegmatogenous retinal detachment (RRD). **Methods:** Single-center retrospective interventional case series of patients who underwent 25G PPV with ESB for ARN-related RRD. Complete anatomic success was defined as the complete attachment of retina after primary PPV. Functional success was measured by the final best-corrected visual acuity (BCVA) $\geq 20/400$. Intraoperative and postoperative complications were also noted. **Results:** 14 eyes of 13 patients were included in the study. Six patients (46.1%) were immunocompromised. The mean follow-up was 23.64 ± 9.95 (range 6-42) months. Silicone oil was used as tamponade in 13 eyes and C_3F_8 gas in one eye. After the primary PPV, complete anatomical success was seen in all eyes (100%), however, one eye developed phthisis bulbi after silicone oil removal (SOR). Statistically significant improvement of BCVA was seen, from $\text{LogMAR } 2.03 \pm 0.29$ preoperatively to $\text{LogMAR } 1.57 \pm 0.63$ postoperatively (p -value 0.014). Six eyes (42.9%) had functional success. Nine eyes (64.3%) had improvement in vision while 4 eyes (28.6%) maintained preoperative vision. 10 eyes (71.4%) underwent cataract surgery, nine eyes (64.3%) underwent SOR while 2 eyes (14.3%) had epiretinal membrane (ERM) under oil during follow-up. **Conclusion:** 25G PPV combines the advantages of minimally invasive vitrectomy surgery while offering improved anatomic outcomes in patients with ARN-related RRD. The functional outcome varies depending on the status of the optic disc and macula.

Key words: 25-gauge vitrectomy, acute retinal necrosis, pars plana vitrectomy, retinal detachment, silicone oil tamponade

Acute retinal necrosis (ARN), described by Urayama *et al.*, is a rare but severe ocular infection manifesting as panuveitis with occlusive retinal vasculitis and diffuse retinal necrosis.^[1-3] The organisms implicated in ARN are the human herpes virus group, namely Varicella-Zoster virus (VZV), herpes simplex virus (HSV) 1 and 2 and occasionally cytomegalovirus (CMV) and Epstein-Barr virus (EBV).^[4-6] Despite prompt diagnosis and treatment, the prognosis of ARN is poor due to a high incidence of rhegmatogenous retinal detachment (RRD) and optic atrophy. Rhegmatogenous RD has been reported to occur in 75%–85% of ARN patients.^[2,4,6] It usually occurs weeks to months after the onset of inflammation due to vitreous changes and the formation of multiple retinal breaks within and at the edge of the atrophic and healthy retina.^[7]

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The results of surgical interventions for RRD post-ARN have been disappointing.^[6,8,9] With improvements in vitreoretinal surgical techniques, anatomic success has improved with studies reporting retinal reattachment rates between 50-100%.^[4,9-12] Recently, microincision vitrectomy surgery (MIVS) has come up as a boon for vitreoretinal surgeons. Twenty-five-gauge (25G) pars plana vitrectomy (PPV) was initially thought to be suitable only for noncomplex vitrectomies. However, newer generation 25G instruments have proven their efficacy in managing complex retinal pathologies like giant retinal tears and complex diabetic tractional retinal detachments (RD).^[13-17]

Most of the studies that report outcomes of RD surgery in ARN patients used the 20G PPV platform.^[4,9-11] Dave *et al.* reported the outcomes of RD surgery done with 20G, 23G, and 25G in 38 eyes of ARN patients. However, no data was provided regarding the number and outcomes of patients who underwent PPV using different gauges.^[12] In the present study, we aim to determine the structural and functional outcomes

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of retinal detachment (RRD) surgery in patients with ARN operated with 25G PPV.

Methods

In this retrospective interventional study, we enrolled all patients who had undergone 25G PPV for ARN-related RRD at our tertiary eye care center from January 2015 to December 2018. The study adhered to the tenets of the declaration of Helsinki. ARN was diagnosed based on the American Uveitis Society criteria.^[18] Clinical records were reviewed for demographic data, immune status, nature and extent of RD, details of surgery done, pre and postoperative Snellen's best-corrected visual acuity (BCVA), intraocular pressure (IOP), anterior segment findings on slit-lamp biomicroscopy and posterior segment findings using both slit-lamp biomicroscopy and indirect ophthalmoscopy and follow-up duration. Patients with less than 3 months of follow-up were excluded. Special emphasis was given to data regarding intraoperative procedures such as concomitant cataract surgery/lensectomy, use of encircling band, proliferative vitreoretinopathy (PVR) dissection, need and extent of retinectomy, use of perfluorocarbon liquid (PFCL) and type of tamponade used. Any intraoperative or postoperative complications, details, and timings of all additional procedures such as cataract surgery, silicone oil removal (SOR), etc. that the patients underwent in the follow-up period were also noted.

Surgical technique

Informed consent was obtained from all patients after explaining the anatomical and visual prognosis. All eyes underwent three-port 25G PPV using the Constellation Vision System (Alcon, Fort Worth, TX, USA) under peribulbar anesthesia by a single vitreoretinal surgeon (RS). 360° conjunctival peritomy and bridling of the four recti muscles were done in cases where a circumferential 240 encircling scleral band (ESB) (Labtician Ophthalmics, Ontario, Canada) needed to be placed. The ESB was sutured onto the sclera using 5-0 Dacron suture. The need for lensectomy/cataract extraction was at the discretion of the surgeon. Careful and meticulous removal of the posterior hyaloid was done. Preservative-free triamcinolone acetonide (40 mg/ml) was used to stain the posterior hyaloid when required. Vitreous base dissection and shaving were carried out with 360° scleral depression. PVR membranes, if present, were removed with the help of the vitreous cutter and intraocular forceps. Retinectomy or perfluorocarbon liquid (PFCL) was used to flatten the retina if needed. Fluid-air exchange was done to aspirate the sub-retinal fluid through a pre-existing break or posterior drainage retinotomy. Two to three rows of near confluent laser spots were applied to the junction of atrophic and normal retina. Tamponade was given using 1000 centistoke (CS), 5000 CS silicone oil (Labtician Ophthalmics, Ontario, Canada), or 16% perfluoro propane (C₃F₈) gas. Inferior iridectomy was done in aphakic patients in the case of silicone oil tamponade (SOT). Sclerotomies and conjunctiva were sutured with interrupted 7-0 vicryl sutures.

Complications in the postoperative period like re-RD, glaucoma, hypotony, cataract, corneal decompensation, epiretinal membrane (ERM) formation, phthisis bulbi, etc. were looked for.

Outcome measures

Anatomic success was defined as retinal attachment after the first vitrectomy. Complete anatomic success (CAS) was

defined as the attachment of the macula and whole of the peripheral retina, without any additional procedures. Partial anatomic success was used when the macula was attached, but the peripheral retina was detached after the first surgery. The World Health Organization and the National Programme for Control of Blindness in India guidelines define blindness as BCVA of <20/400 in the better eye.^[19] Hence we defined functional success as the attainment of final BCVA ≥20/400 at the last follow-up. Intraoperative and postoperative complications were noted down.

Statistical analysis

Statistical analysis was done using SPSS version 20 (Chicago, IL, USA) software. Mean and standard deviations were computed for all continuous variables. Qualitative data were expressed as percentages. BCVA was converted from Snellen's to the logarithm of the minimum angle of resolution (LogMAR) scale for statistical analysis. Counting fingers at 30 cm (CF), hand movement (HM), and perception of light (PL) were considered as 1.9, 2.3, and 2.7 respectively on the LogMAR scale.^[20,21] Wilcoxon rank-sum test was used to assess the change in BCVA at presentation and final follow-up. A value of $P < 0.05$ was considered to be statistically significant.

Results

14 eyes of 13 patients (9 males) were included in the study. The mean age at the time of presentation was 43.1 ± 15.9 years (range 19–65 years). The mean follow-up was 23.64 ± 9.95 months (range 6–42 months). Four patients (30.8%) had bilateral ARN. Out of them, one patient developed RRD in both eyes and underwent 25G PPV in both eyes within a gap of 10 days (Case 9). Six patients (46.1%) were immunocompromised. Of which four patients were HIV positive (case 3,4,9,11), receiving highly active antiretroviral treatment (HAART) while two patients were on long term immunosuppression for microscopic polyangiitis (case 6, azathioprine) and systemic lupus erythematosus (case 12, azathioprine and tacrolimus). Figs. 1 and 2 depict the fundus photographs showing the presenting clinical features and surgical outcome of case 6. Three out of four patients with bilateral ARN were immunocompromised. The demographic profile, surgical details, and outcomes of the patients are presented in Table 1.

Seven patients (53.9%) were treated with intravenous acyclovir (10 mg/kg/dose, three times a day) for 10–14 days, followed by oral valacyclovir 1 gm three times a day for 3 months. Six patients (46.1%) received only oral valacyclovir 1 gm three times a day for 3 months. Oral steroids (0.5 mg/kg) were started 48–72 h after the initiation of systemic acyclovir in all patients. Low dose oral aspirin (75 mg/day) was given to all patients.

Retinal detachment developed between 1 to 14 weeks after the onset of ocular symptoms (mean 8.37 ± 4.1 weeks). Five patients (six eyes, 42.8%) had RRD at the time of presentation to our hospital. Three eyes (21.4%) had active retinitis along with RRD (case 3,4 and 8) while eleven eyes (78.6%) had RRD with healed retinitis and atrophic retina. None of the patients had received prophylactic barrage laser.

The mean baseline LogMAR BCVA was 2.03 ± 0.29 . Only one patient had BCVA ≥ 20/400 at presentation. All except two eyes had total RRD, and the macula was detached in all cases. All patients underwent 25G PPV, endolaser, and internal tamponade. ESB, 240 style, was placed in 13 eyes (92.9%) while

one eye (7.1%, case 13) underwent 360° retinectomy, thus eliminating the need for ESB. 5000 CS and 1000 CS silicone oil were used in seven and six eyes respectively. In one eye with subtotal superior RD, 16% C₃F₈ was used (case 3) [Table 1].

All eyes were phakic at the time of presentation. None of the eyes had complete posterior vitreous detachment. Eight

eyes (57.1%) had PVR > C1 in this series. Five eyes (35.7%) needed retinectomy at the time of PPV. Three of them had active retinitis at the time of PPV (cases 3,4 and 8) and underwent localized retinectomy. Two eyes had extensive anterior PVR (cases 6 and 13)- case 6 underwent localized retinectomy while case 13 needed 360° peripheral retinectomy to settle the retina. Pars plana lensectomy was done and PFCL was needed

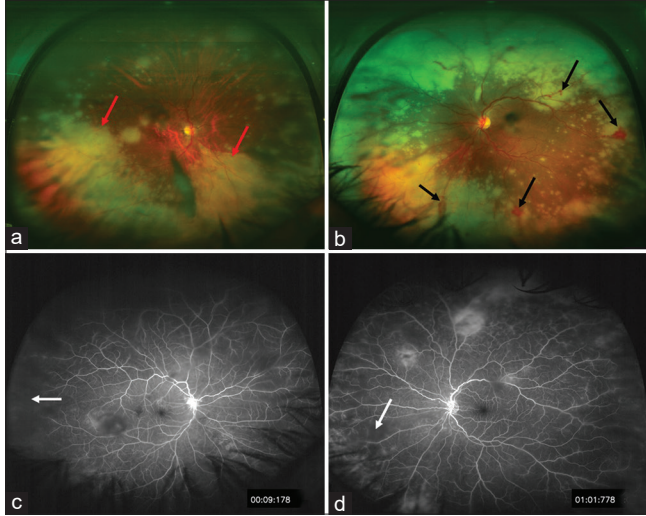


Figure 1: Wide-field fundus photo of the right eye (RE) showed multiple discrete peripheral yellowish tongue-shaped retinitis lesions (red arrows) (a). Optic atrophy had already set in. Visual acuity was no light perception. Similar clinical picture was present in the left eye (b). Multiple retinal hemorrhages were present along the blood vessels indicative of vasculitis (black arrows). Visual acuity was counting fingers (CF). Wide-field fluorescein angiography (FFA) showed bilateral 360° peripheral vasculitis and capillary nonperfusion areas (white arrows) corresponding to the necrotic retina (c and d)

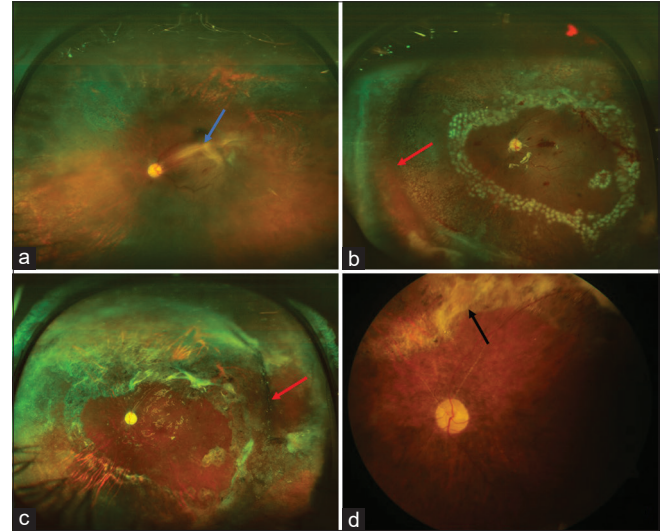


Figure 2: Two months after presentation, the patient developed retinal detachment in the left eye (blue arrow) (a). Postoperative 1 week (b) and 1 year (c) images showed attached retina with silicone oil in situ. Red arrows showed the effect of the encircling band. Post silicone oil removal (SOR) fundus picture (d) showed attached retina with optic atrophy and retinal scar (black arrow). BCVA was maintained at counting fingers (CF)

Table 1: Demographic profile, surgical details, and outcomes of ARN-related retinal detachment patients who underwent 25-gauge pars plana vitrectomy

Age, years/ Sex	Eye	Immune status	Extent of RD	Fellow eye	Baseline LogMAR BCVA (Snellen's equivalent)	Intraoperative modification	Additional procedure	Tamponade	Follow-up (months)	Final LogMAR BCVA (Snellen's equivalent)
41/M	L	IC	Total	WNL	2.3 (HM)	None	PE	SO 5000CS	32	1 (20/200)
49/M	L	IC	Total	WNL	1.9 (CF)	None	PE, SOR+ERM Peeling	SO 5000CS	20	1.9 (CF)
55/M	L	HIV	Subtotal	WNL	1.9 (CF)	RT	PE	C3F8	8	1.3 (20/400)
65/M	L	HIV	Subtotal	ARN	2.3 (HM)	RT	PE, SOR	SO 1000CS	14	1.9 (CF)
62/M	L	IC	Total	WNL	1.3 (20/400)	None	PE, SOR	SO 5000CS	24	0.7 (20/100)
32/F	L	M PAN	Total	ARN	1.9 (CF)	PPL, RT	SOR	SO 5000CS	42	1.9 (CF)
58/M	R	IC	Total	WNL	1.9 (CF)	None	PE, SOR	SO 1000CS	24	1 (20/200)
19/M	L	IC	Total	WNL	2.3 (HM)	RT	None	SO 5000CS	6	1.9 (CF)
40/F	R	HIV	Total	ARN	2.3 (HM)	None	PE	SO 5000CS	36	2.3 (HM)
40/F	L	HIV	Total	ARN	1.9 (CF)	None	PE, SOR	SO 1000CS	36	0.6 (20/80)
38/M	R	IC	Total	WNL	1.9 (CF)	None	SOR	SO 1000CS	24	1 (20/200)
62/M	L	HIV	Total	WNL	1.9 (CF)	None	PE, SOR	SO 1000CS	24	1.9 (CF)
22/F	R	SLE	Total	WNL	2.3 (HM)	None	PE, SOR	SO 1000CS	15	2.7 (PL)
20/F	L	IC	Total	ARN	2.3 (HM)	PPL, RT	ERM peeling + SOX	SO 5000CS	20	1.9 (CF)

ARN=Acute retinal necrosis, BCVA=Best corrected visual acuity, C3F8=Perfluoro propane gas, CF=Finger counting at 30 cm, CS=Centistoke, ERM=Epi-retinal membrane, F=Female, HIV=Human immunodeficiency virus, HM=Hand movement, IC=Immunocompetent, IOM=Intraoperative modifications, L=Left, M=Male, M PAN=Microscopic polyangiitis, PE=Phacoemulsification, PL=Perception of light, PPL=Pars plana lensectomy, R=Right, RD=Retinal detachment, RT=Retinectomy, SLE=Systemic lupus erythematosus, SO=Silicone oil, SOR=Silicone oil removal, SOX=Silicone oil exchange, WNL=Within normal limits

to settle the retina in both eyes with anterior PVR. Direct PFCL-silicone oil (5000CS) exchange was done at the end of PPV in both these eyes.

No intraoperative complications were encountered, and the retina was attached in all cases at the end of the procedure. Complete anatomical success was seen in 100% of patients. The change in mean BCVA at the last follow-up as compared to baseline was statistically significant, improving from LogMAR 2.03 ± 0.29 preoperatively to LogMAR 1.57 ± 0.63 at final follow-up ($P = 0.014$). Nine eyes (64.3%) had improvement in vision while 4 eyes (28.6%) maintained preoperative vision. Six eyes (42.9%) had final BCVA $\geq 20/400$, thus meeting the criteria for functional success. One eye (7.1%) went into developing phthisis bulbi after SOR.

During follow-up, 10 eyes (71.4%) underwent uncomplicated phacoemulsification with intraocular lens implantation while nine eyes (64.3%) underwent SOR. The mean duration between primary vitrectomy and SOR was 15.11 ± 7.78 (range, 6–30) months. One eye (Case 12), which had complete anatomical success after primary PPV with BCVA of HM and normal IOP developed hypotony after SOR (21 months after primary vitrectomy). The patient refused any further surgical intervention. This eye went onto developing phthisis bulbi. No other eyes developed RD after SOR. ERM formation was noted in 2 eyes (14.3%)—case 2 and 13. In case 2, ERM peeling was done at the time of SOR. In case 13, ERM formation was noted within 2 weeks of primary PPV. After 1 month of primary PPV, ERM peeling with silicone oil exchange (SOX) was done. The retina remained attached to the last follow-up. IOP was raised in one case (7.1%) and was controlled with two topical antiglaucoma drugs (case 10). After SOR, IOP normalized without any need for medication. All eyes (100%) had some degree of optic disc pallor suggestive of optic atrophy.

Discussion

Management of RRD after ARN poses numerous challenges. Rapid progression of PVR, thin atrophic retina with multiple holes, need for retinectomy, presence of ischaemic optic atrophy, increased chances of re-detachment, and need for prolonged endotamponade are some of the challenges that surgeons face while managing these patients. Before the era of vitrectomy, scleral buckle surgery had abysmal results in these patients, with an anatomic success rate of 22%.^[8] A combination of vitrectomy techniques with ESB and SOT has improved the anatomical success rate to the range of 78 to 100%.^[4,9–11] All these series reported results of 20G PPV in managing ARN-related RRD. Dave *et al.* reported a series of 38 post-ARN RRD eyes where 20G, 23G, and 25G PPV were used [Table 2]. However, no information was provided regarding the difference in outcomes of the aforementioned three approaches in their series.^[12]

MIVS has evolved and has several advantages compared to conventional 20G PPV, namely reduced intraoperative retinal mobility, lesser vitreous traction, easy manipulation of tissues, cutter port optimization, lesser need for multiple instrument exchanges, improved sclerotomy wound anatomy and faster postoperative recovery.^[14–17] 25G PPV was initially used only for noncomplex retinal pathologies like macular hole, ERM, vitreous hemorrhage, etc.^[14–16] With advancements in instrumentation and visualization systems, 25G vitrectomy is now routinely used for complex retinal

surgeries.^[17,22] Compared with the 20G vitrector, the port is smaller and located closer to the tip of the probe in the 25G one. The smaller port fundamentally has lower aspiration and infusion rates. Combined with the higher cutting rate of the 25G cutter, this results in a low flow system which reduces the average vitreous fiber travel between cuts and limits the traction exerted on vitreous and retina, reduces motion of detached retina during vitreous shaving.^[23] Kumar *et al.* reported outcomes of 25G PPV in giant retinal tear-related RD and achieved primary retinal attachment in all eyes with no intraoperative or postoperative complications.^[13] In ARN, the posterior hyaloid is thick, fibrotic, and tenacious, retina is thin, atrophic, and with multiple breaks. The “port-based flow limiting” and less port-cutter tip distance in MIVS not only enhances safety during vitreous shaving over mobile retina but also allows the cutter to serve as a dissection tool by enabling access to the very narrow tissue planes.^[23]

ARN is accompanied by severe inflammation which leads to the formation of tenacious membranes over the retina, leading to anterior PVR, due to severe condensation and subsequent contraction of the vitreous base.^[10] In phakic eyes, adequate dissection of all the membranes around the vitreous base is not possible without causing iatrogenic damage to the crystalline lens. The use of an ESB helps in supporting the vitreous base and releasing the residual traction on the contracted peripheral retina. In a retrospective study, Kopplin *et al.* showed that the re-detachment rate was 57% (4 out of 7 eyes) in eyes without ESB placement compared to 33% (2 out of 6 eyes) where ESB was used along with PPV.^[4] Although the difference was not statistically significant, they suggested that placement of primary ESB at the time of PPV could be beneficial and avoid the need for lensectomy. Almeida *et al.* reported no re-detachment after PPV, ESB placement, and SOT.^[24] Ahmadi *et al.* performed primary lensectomy in 15 out of 18 eyes and did not place ESB in any of these eyes. Lensectomy facilitated approach to the vitreous base and management of anterior PVR.^[10] Blumenkranz *et al.* reported higher complication rates in those patients who underwent PPV, ESB, and cryotherapy than those treated with PPV (without ESB), lensectomy, and laser photocoagulation. However, placement of ESB was moderately high and posterior in their series, which led to severe ocular hypertension and choroidal detachment while excessive cryotherapy resulted in the breakdown of the blood-retinal barrier resulting in accelerated PVR and re-detachment.^[7] In the MIVS era, curved and flexible endolaser probes allow retinopexy of peripheral retinal breaks, thereby decreasing the need for cryotherapy.^[13,16] In our series, all eyes were phakic and 240 ESB was placed in 13 eyes (92.9%). All retinal breaks were lasered with the need for cryotherapy in only 2 eyes (14.3%). One eye developed raised IOP which was controlled with topical antiglaucoma drugs which could be discontinued after SOR. We preserved the crystalline lens in 12 eyes (85.7%) with a 100% CAS rate. Preserving the crystalline lens helped in improving functional success. We believe that the use of ESB at the time of PPV supports the vitreous base as complete vitreous base dissection would not be possible due to phakic status.

Studies advocate the role of 5000CS SO when the eyes need tamponade for long duration.^[25] We opted for 5000CS oil as endotamponade in cases of involvement of the other eye, young patients, and in eyes with higher grade PVR with increased risk of failure.

Table 2: Comparison of anatomical and functional success among various studies after pars plana vitrectomy for retinal detachment secondary to acute retinal necrosis

Author/Year of Publication	Number of eyes operated	Instrument gauge	Endotamponade agent	Complete anatomical success (%)	Functional outcome at the last follow-up (%)
Kopplin <i>et al.</i> ^[4] /2016	13	20	SO	53.8	53.8 (BCVA \geq 20/200)
Mc Donald <i>et al.</i> ^[9] /1991	9	20	C3F8 SF6	89	51 (BCVA \geq 20/200)
Ahmadiéh <i>et al.</i> ^[10] /2003	18	20	SO 1000/5000 Long-acting gas	100	61.1 (BCVA \geq 5/200)
Dave <i>et al.</i> ^[12] /2018	38	20,23,25	SO 5000CS	58	42.1 (mean BCVA=20/200)
This study	14	25	SO 1000CS/5000CS C3F8	100	42.9 (BCVA \geq 20/400)

BCVA=Best corrected visual acuity, C3F8=Perfluoro propane gas, CS=Centistoke, SF6=Sulphur hexafluoride gas, SO=Silicone oil

Post ARN RD generally occurs after 8 to 12 weeks of the onset of retinitis.^[8] In this study also, RD developed between 1 to 14 weeks after the onset of ocular symptoms (mean 8.37 ± 4.1 weeks). Dave *et al.* have previously reported that the presence of active retinitis at the time of RRD is a poor prognostic factor for anatomic and functional outcomes post PPV.^[12] In our series, three eyes (21.4%) had active retinitis along with RRD. One eye which had limited superior RD was given C3F8 tamponade and achieved both anatomical and functional success. The rest two eyes failed to achieve functional success. One underwent SOR after 12 months of primary PPV and the other eye still has silicone oil in situ.

The functional outcome has been reported as a variable degree of improvement in BCVA in 40-60% of patients in various series [Table 2].^[4,9-11] Factors such as ischemic optic atrophy, ERM leading to macular pucker, and retinal ischemia due to occlusive vasculitis are associated with dismal functional outcomes.^[4,9] McDonald *et al.* reported a postoperative increase in BCVA in 78% eyes although only 51% achieved BCVA of 20/200 or better.^[9] Ahmadiéh *et al.* achieved improvement in BCVA in 13 out of 18 eyes (72.2%) with eleven eyes (61.1%) attaining the ambulatory vision of $>5/200$.^[10] Kopplin *et al.* achieved BCVA of 20/200 or better in 53.8% post-ARN RRD eyes that underwent 20G PPV.^[4] In our series, 6 patients (42.9%) had a final BCVA \geq 20/400. Poor functional outcome in our series may be attributed to the presence of ischaemic optic atrophy. Also in our series, five patients (6 eyes) had retinal detachment when first presented to our clinic. Functional success was achieved only in two of these eyes.

Complications like hypotony, corneal decompensation, and phthisis bulbi have been reported by various authors after vitrectomy for post-ARN RRD.^[9-12] One eye (7.1%) in our series developed hypotony and subsequently went into phthisis bulbi post-SOR. Two eyes (14.3%) developed ERM which was managed by ERM peeling + SOR in one eye and ERM peeling + SOX in the second eye. One eye developed raised IOP which normalized after SOR. A variable degree of optic atrophy was present in all eyes. Corneal decompensation or band-shaped keratopathy were not seen in our series.

Conclusion

To conclude, 25G PPV can achieve excellent retinal re-attachment rates in post-ARN RRDs without significant intraoperative and postoperative complications. Functional outcomes continue to remain poor due to extensive retinal damage secondary to

the infection and ischemia and development of optic atrophy. The study has its limitations. It is retrospective in nature and has a small sample size. However, owing to the rarity of ARN and post ARN RRD, a large number of patients are difficult to come by. Despite these limitations, this study has shown superior anatomic and comparable functional outcomes of 25G PPV compared to lower gauge PPV. Thus, 25G PPV should be considered in managing these complex retinal detachments as it helps in improving surgical outcomes without increasing intra or postoperative complications.

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Conflicts of interest

There are no conflicts of interest.

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