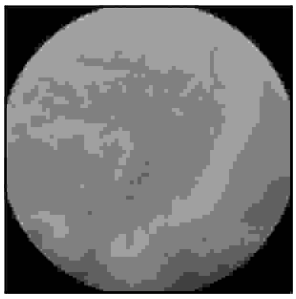
ORIGINAL PROF-931

PROLIFERATIVE VITREORETINOPATHY



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ABSTRACT... rajaomar@gmail.com **Objective:** The objective of study to assess the success of pars plana vitrectomy with use of silicone Oil for internal tamponade in traumatic rhegmatogenous R D with severe PVR. **Setting & Period:** This study was carried out in department of Ophthalmology Military Hospital Rawalpindi. **Material & Methods:** Fifteen cases with severe proliferative vitreoretinopathy (PVR Grade C, according to up dated retina Society Classification of 1991) was included in study. All the patients had traumatic rhegmatogenous retinal detachment with history of blunt ocular trauma, without globe rupture, outcome of the treatment was assessed by post operative anatomical and physiological success. **Results:** Anatomical success was encouraging in-spite of advance disease and technically difficult and complicated intra-ocular maneuvers.

Key Words Pars Plana, Silicone Oil, Rhegmatogenous, PVR

INTRODUCTION

Proliferative vitreoretinopathy (PVR) is a disorder in which there is proliferation of membranes on the inner surface of retina, posterior surface of detached vitreous and the outer surface of the retina. This proliferative process also occurs in the substance of vitreous and retina[1]. Subsequent contraction of these membranes render stiff and may also reopen a successfully closed retinal break.

Proliferative vitreoretinopathy is an important entity in that it is the commonest cause of failed retinal detachment surgery[2]. It occurs after rhegmatogenous retinal detachments and complicates 5-10 % of all cases of rhegmatogenous retinal detachment[3]. In long-standing untreated cases of rhegmatogenous retinal detachment, PVR occurs in 100% of cases[4]. In this era of professional and technical advancement, treatment of PVR still remains a challenge for the ophthalmologists. Considering the fact that PVR is a potential cause of blindness, traumatic retinal detachments assume particular significance because ocular trauma is a

preventable entity.

The job requirement of the armed forces is such that ocular trauma assumes tremendous significance in this institution. In this study, cases with history of only blunt ocular trauma that subsequently developed rhegmatogenous retinal detachment complicated with PVR were included.

The purpose of this study was to assess the success of pars plana vitrectomy with silicone oil in treatment of those cases of severe PVR who developed rhegmatogenous retinal detachment subsequent to blunt ocular trauma.

MATERIALS & METHODS

The study was carried out in Department of Ophthalmology Military Hospital Rawalpindi. It consists of a series of fifteen patients who were diagnosed and treated, between Jan 98 to Jan 99 for traumatic rhegmatogenous retinal detachment with proliferative vitreoretinopathy grade C.

INCLUSION CRITERIA

All the patients included in this study had history of blunt ocular trauma and all underwent pars plana vitrectomy with silicone oil injection for internal tamponade.

Patients in the study include serving armed forces personnel as well as civilians. Patients included were fresh as well as those requiring repeat surgery. Cases reporting directly as well as referral from other centre were included in the study. Cases included had history of blunt ocular trauma.

EXCLUSION CRITERIA

Cases with globe rupture, cataract or diabetes mellitus were excluded from the study.

Patients were admitted in the hospital. Thorough medical and ophthalmic history was obtained. Best-corrected visual acuity was recorded. Slit lamp examination of anterior segment of both eyes, fundus examination with 90-D lens and indirect ophthalmoscope was done. Applanation tonometry was done. Fundus findings were recorded and PVR documented as per updated retina Society Classification of 1991.

RESULTS

A total of fifteen cases were included in this study. All the patients had traumatic retinal detachment with proliferative vitreoretinopathy grade C. Eleven (73.33%) patients were male and four (26.66%) were female (Fig-I). Patients were serving armed forces personnel. Twelve (80.00%) cases were less than forty years of age (Fig-II). Seven (46.66%) had sports related trauma. Fourteen (93.33%) developed visual complaints two months after the trauma.

Table-I. Intra-operative Complications in Fifteen Eyes

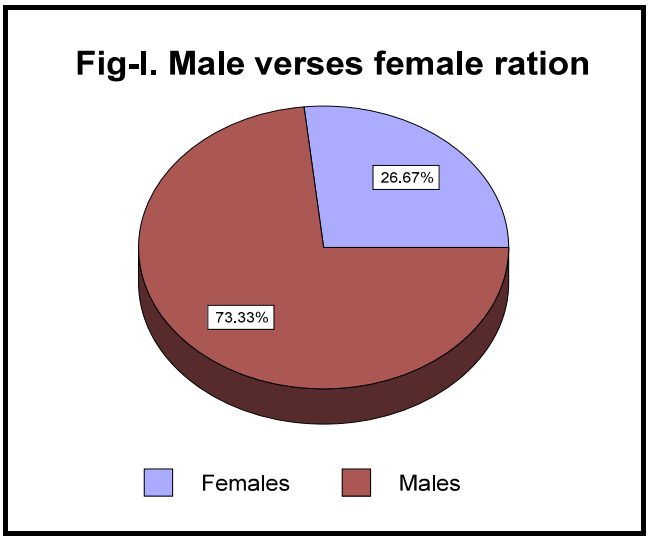
Complication	No. of patients	% Age
Oil in sub retinal space	1	6.66%
Iatrogenic retinal break	1	6.66%
Oil in anterior chamber	1	6.66%
Incarceration of retina	1	6.66%
Retinal Hemorrhage	1	6.66%

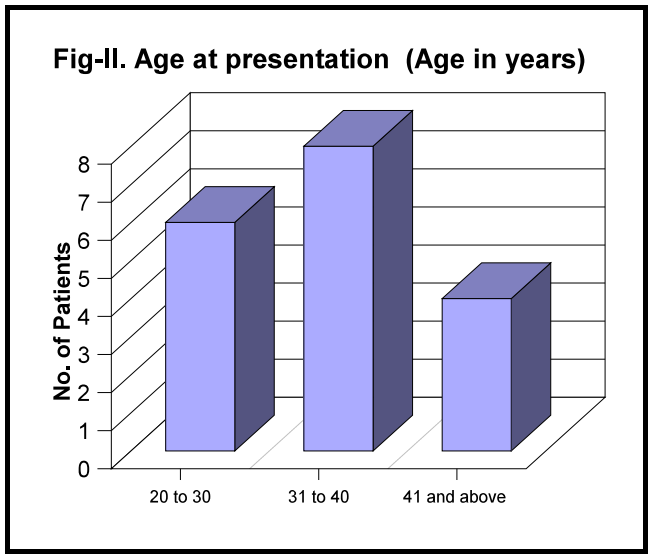
Table-II. Postoperative Complications in Fifteen Eyes

Complication	No. of patients	% Age
Short term rise in IOP	5	33.33%
Long term sustained rise in IOP	1	6.66%
Cataract	3	20.00%
Oil leak from sclerotomy	1	6.66%
Oil in anterior chamber	2	13.33%
Emulsification of oil	1	6.66%
Bullous Keratopathy	1	6.66%

Two (13.33%) cases were using concave glasses of more that 6DS. Twelve (80.00%) reported for the first time and three (20.00%) reported after unsuccessful

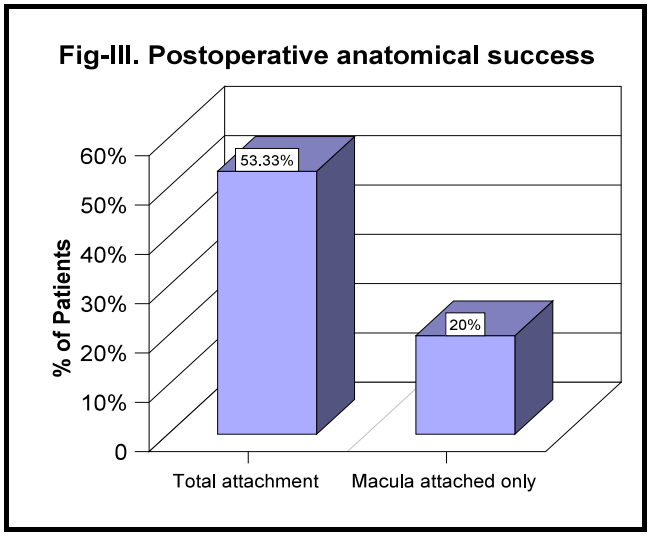
retinal detachment surgery. All the cases had preoperative visual acuity of CF or worse. Fourteen (93.33%) patients were phakic and one (6.66%) aphakic.





Two (13.33%) cases had maculopathy prior to the surgery. Intra-operative complications are summarized in Table I and Postoperative complications are summarized in Table II post operatively, eight (53.33%) patients showed complete retinal reattachment (Fig-III), three (20.00%) showed partial detachment with macula attached and four (26.66%) cases were anatomical failure. Visual acuity (Fig-IV), improved to 6/36 in two (13.33%) cases,6/60 in three(20.00%) cases, 2/60 in one (6.66%) cases and nine (60.00%) showed vision of CF or worse.

Three (20.00%) cases developed silicone oil related complications. Silicone oil was removed in three (20.00%) cases one (33.33%) case developed redetachment after the removal of silicone oil.



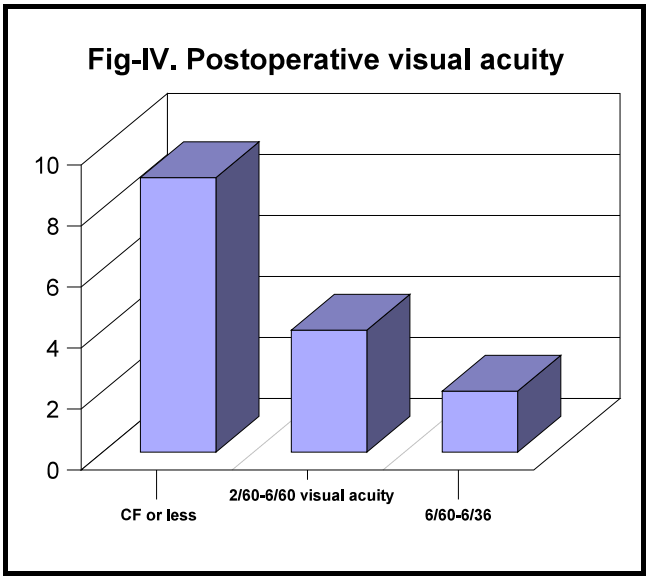
DISCUSSION

Proliferative vitreoretinopathy is an important entity in that it is the commonest cause of failure for retinal attachment surgery. It occurs in 5-10 % of all cases of retinal detachment. Surgical treatment for severe PVR is accompanied with high rates and wide range of complications. It is important to realize that the eyes undergoing surgery for severe PVR have a poor preoperative status and thus it is prudent to accept that the basic aim in operating these eyes is to prevent irreversible blindness rather than looking at the physiological results.

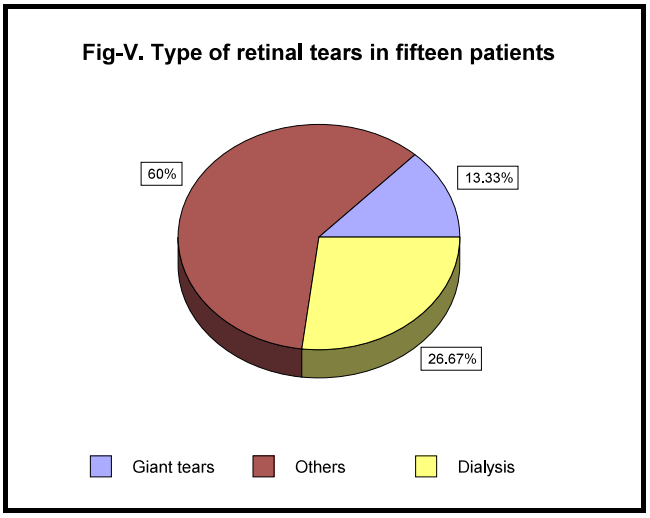
Majority (80%) of the cases in our study were less than 40 years of age. This is because we included only those patients who had history of blunt trauma. Unfortunately, young population is at increased risk of sports related as well as profession related trauma.

There is a time lag in sustaining the blunt ocular trauma

and development of retinal detachment. Our study shows that in majority of the cases patients presented two months or more after trauma. This delay in development of the retinal detachment is because of relatively healthy vitreous gel in young people, which takes long time to liquefy.

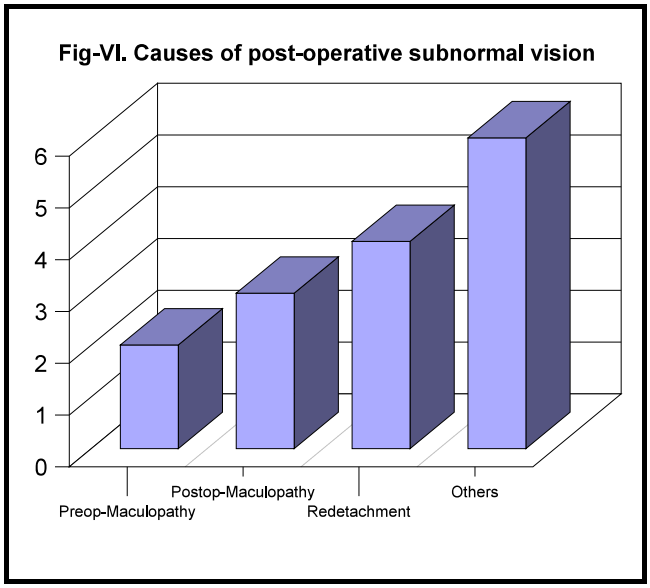


Predominant type of retinal tear was retinal dialysis (Fig-V). It occurred in inferotemporal quadrant in majority of cases.



Anatomic success in management of severe PVR ranges between 60-80 %. There figures include total retinal attachment as well as the eyes with attached maculae only. This anatomic success is attributable to improved vitrectomy procedures as well as better agents for intra-ocular tamponade. It is also important to mention that results of surgery for posterior PVR are better than anterior PVR.

In our study the anatomic success was 70%. Anatomic failure occurred in cases of giant retinal tears, repeat surgeries and the cases with anterior PVR. Partial detachment in all the cases occurred inferiorly because of physical properties of silicone oil. We know that because of incomplete filling, in upright posture the silicone oil fails to tamponade the inferior retina due to its low specific gravity.



Physiological results in PVR are not so encouraging. On presenation, the visual acuity in all the cases was CF or less. This poor preoperative visual acuity was because of detached maculae in all the cases. Postoperative visual acuity in two cases improved to 6/36. Both these patients were young and had first surgery on their eyes. Few patients had VA less than CF. The patients with very poor visual acuity had either preoperative or Postoperative maculopathy, Silicone oil related complications or had more than one surgery (Fig-VI).

Silicone oil was used for internal tamponade, which resulted in complications in 30 % cases. Most common complications were glaucoma and cataract. Postoperative short-term rise in IOP was managed with medical therapy. Long-term rise in IOP needed removal of silicone oil but still IOP did not lower to normal. This indicates that a permanent damage to trabecular meshwork had resulted, Thereby requiring trabeculectomy. Cataract did not appear in any case before two months postoperatively. In six months follow-up it remained limited to scattered posterior subcapsular, not requiring cataract surgery.

Silicone oil was removed three months postoperatively in three cases because of complications. These complications include uncontrolled glaucoma, Bullous keratopathy and emulsification of silicone oil. By removal of silicone oil, keratopathy and glaucoma did not show any improvement. Among the three cases in which silicone oil was removed, one case developed redetachment requiring another surgery and silicone oil injection for internal tamponade.

CONCLUSION

Proliferative vitreoretinopathy is the main cause of failure of surgery for rhegmatogenous retinal detachment.

Anatomical success in the management of PVR is independent from physiological success. Although anatomical success is 70 % - 80 %, postoperative visual acuity does not correlate with this.

Main postoperative complications are related to silicone oil. An ideal agent for intraocular tamponade needs to be evolved which can be left in the eye for indefinite time without producing the complications.

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NEVER REACT; WHEN IN RAGE

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