ORIGINAL ARTICLE

Efficacy of Vasectomy with Internal Tamponade Along with Scleral Buckling vs Vitrectomy with Internal Tamponade in the Management of Complicated Retinal Detachment

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ABSTRACT

Aim: To determine the effectiveness of vitrectomy with internal tamponade combined with sclera buckling in the management of complicated retinal detachment.
Methods: This quasi experimental study was conducted in the Department of Ophthalmology, Nishtar Medical College/Hospital, Multan from June 2014 to December 2015. A total of 60 cases were included
Results: Out of 60 patients there were total 32 (52.3%) male and 28 (46.7%) were female. Patients included in the study belonged to different age groups. Mean age at presentation was 46± 23 years. Highest incidence of rtinal detachment was in age group 45-60 years of age. Out of 60 patients, 17(28.3%) had visual acuity maintained up to counting fingers. As far as location of retinal tears is concerned, 35(58.3%) had tears in superior region. Postoperative complications can occur in any surgical procedure.
Conclusion: It is concluded from the study that vitrectomy with sclera buckling should be preferred over vitrectomy alone particularly in patients having inferior retinal breaks.
Keywords: Vasectomy, Internal tamponade, Detachment.

INTRODUCTION

Retinal reattachment surgery has been in practice for the past 40 years and since then there has been a constant search for better techniques[1]. Better understanding of the pathophysiology and new instrumentation has forced the vitreoretinal surgeons to reevaluate the conventional methods of treating retinal detachments. It has now become clear that no single technique can be applied to all eyes and not all eyes are fit for a single technique[2]. Scleral buckling remains the most common method of retinal reattachment surgery performed all over the world[3]. In developing countries, the final reattachments rates vary from 77-87% with the use of modern technology[4].

Complicated retinal detachment is defined as one in which vitreous cannot be used as an internal tamponade. The dynamic vitreous traction which first caused the retinal tear and its subsequent detachment is changed by the formation of membranes into the vitreoretinal retraction. This complication may be localized as in macular pucker or isolated fixed folds or it may be generalized vitreoretinal retraction.

Proliferative vitreoretinopathy is defined as a growth of cellular membranes and their contraction within the vitreous cavity and on both surface of retina following RRD[5]. The severity of PVR depends upon the size of retinal break. PVR increases ten times, if the size of the retinal break is more than three disc diameter. PVR is still the most common cause of failure of RRD. Estimates of postoperative PVR rates range from 5-10% and vary depending on case selection and preoperative risk factors[6].

Paras plana vitrectomy procedures are being increasingly employed in the treatment of complicated retinal detachments. Silicone oil, heavy liquids, perflurocarbon gases and sulphur hexafluoride have been used to reposition the retina after vitrectomy[7]. Solicone oil provides an eye with a longer period of apposition of the retina against the retinal pigment epithelium than eyes with extended gas tamponades[8]. In general, retinal detachment surgery with vitrectomy and silicone oil tamponade results in better anatomic than visual outcomes[9]. Silicone oil can be used in PVR, giant retinal tears, retinal detachments with posterior breaks and unrelieved traction[10]. It also has advantage over gases in the cases where patients have to travel by air after surgery[11].

MATERIAL AND METHODS

This quasi experimental study was conducted in the Department of Ophthalmology, Nishtar Medical College/Hospital, Multan from June 2014 to December 2015. A total of 60 cases were included in the study. The patients with complicated RRD with advance PVR and failed primary buckling surgery and primary vitreoretinal surgery were included.

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Patients were divided in two equal groups. Group-A was treated by vitrectomy with internal tamponade along with sclera buckling while group-B was treated with vitrectomy with internal tamponade alone. Data was analyzed using SPSS-10 version. Chi square test was applied to compare the results.

RESULTS

There were 17 (56.7%) were mail and 13 (43.3%) were female in group-A while in group-B male and females were 15 (50%). Age range was 24-65 years and mean age at presentation was 46 ± 23 years. As regards the location of retinal breaks 18 (60%) were superior in group-A and 12 (40%) inferior in group-B. Postoperative visual acuity is shown in table-1. As regards types and shape of retinal break is given in table-2. Table-3 shows preoperative PVR. Preoperative complications are evaluated in table-4. Regarding postoperative anatomical success rate is shown in table-5. Retinal breaks grade are given in table-6. Postoperative complications are also shown in table-7.

Table-1:- Preoperative visual acuity (n=60)

Visual acuity)	Group-A)	Group-B
Counting fingers	9(30%)	8(26.7%)
+ive hand movements	12(40%)	10(33.3%)
PL & PR	9(30%)	12(40%)
> 60	5(16.7%(	6(20%)

Table-2:- Types and shape of retinal break (n=60)

Type & shape	Group-A	Group-B
HSS	18(60%)	20(66.7%)
GRT	4(13.3%)	3(10%)
Rounded	3(10%)	3(10%)
Mixed	4(13.3%)	3(10%)
No hole	01(03.3%)	1(03.3%)

Table-3:- Preoperative PVR (n=60)

PVR	Group-A)	Group-B
Grade A & B	-	-
Grade CP-I	09 (30.0%	12 (40%)
Grade-CP-II	15 (50.0%)	09 (30.0%)
Grade-CP-III	02 (06.7%)	05 (11.7%)
Grade-CP-IV	04 (13.3%)	04 (13.3%)
Grade-CP-V	-	-

Table-4:- Preoperative complications (n=60)

Complication	Group-A	Group-B
Lens damage	2(06.7%)	2(06.7)
Chorioidal hemorrhage	4(13.3%)	4(13.3%)
Retinal breaks	3(10%)	3(10%)
Preretinal hemorrhage	2(06.7%)	2(06.7%)
Silicone oil sub retinal space	3(10%)	8(26.7%)

Table 5: Postoperative anatomical success rate (n=60)

Description	Group-A	Group-B
Complete retinal reattachment	20(66.7%)	16(60%)
Partial retinal reattachment	7(23.3%)	7(23.3%)
No retinal reattachment	3(10%)	5(16.7%)

Table-6:- Grades of retinal breaks (n=60)

Grade	Group-A	Group-B
CP-I	8(26.7%)	09 (33.3%)
CP-II	13(43.3%)	07 (23.3%)
CP-III	1(03.3%)	02 (06.7%)
CP-IV	3(10%)	02 (06.7%)

Table 7: Postoperative complications (n=60)

Complication	Group-A	Group-B
Glaucoma	6(200%)	4(13.3%)
Cataract	2(06.7%)	2(06.7%)
Emulsification	3(10%)	5(16.7%)
Hypotony	2(06.7%)	3(10%)
PVR	6(20%)	9(33.3%)

DISCUSSION

Complicated retinal detachment has always been a challenge for vitreoretinal surgery. With the introduction of high tech vitrectomy and intraoperative vitreoretinal tools, vitreoretinal surgeons are now in a better position to reattach the retina[12,13]. Various methods have been used to facilitate complicated retinal detachment surgery such as endophotocoagulation, internal drainage, internal tamponade and heavier than water liquids. In complicated retinal reattachment surgery removal of subretinal or epiretinal membranes and elimination of other traction elements is of immense importance. By using silicone oil this goal can be easily and successfully achieved. Once the membranes and all tractional forces are thoroughly removed internal tamponade keeps the retinal attached for considerable period so that in the mean time adhesion can develop between retina and retinal pigment epithelium[14]. The commonest cause of redetachment is PVR. The elimination of all tractional forces on the retina is the key to successful retinal reattachment.

In general, the European vitreoretinal surgeons prefer the use of silicone oil while vitreoretinal surgeons in the United States preferred the use of perfluoropropance gases. The silicone study group reported silicone oil to be superior to sulfur hexafluoride with little difference between the use of 14% perfluoropropane gas and 1000 centistoke silicone oil[15]. We prefer the use of silicone oil because it is cheap, easily available and also because the incidence of complications is less than

with the guse of gases. We studies 60 cases of complicated retinal detachment and silicone oil was used as internal tamponace. There were 23(53.3%) male and 28(46.7%) were female patients, 34 (56.7%) cases were aphakic, 4(6.7%) were phakic and 22(36.7%) were pseudophakic.

The study the anatomical success rate in group-A was 66.7% and in group-B, it was 60%. Mean anatomical rate was 63.3%. In a study it is mentioned that anatomical success rate was 46(67.6%) eyes[15]. In another group of 131 patients, who underwent vitrectomy with intraocular silicone oil tamponade complete retinal reattachment was achieved in 73% of cases[16].

As to postoperative visual acuity, we noticed that even after complete anatomical reattachment of the retina visual acuity ranged from counting fingers to 6-24. These patients had history of retinal detachment for more than 6 months before surgery soit is important that retinal reattachment should be done as early as possible because in long standing retinal detachment the chances of visual success are les as compared to fresh retinal detachment. In complicated retinal detachment the main objective is to achieve anatomical success.

CONCLUSION

It is concluded from the study that vitrectomy with sclera buckling should be preferred over vitrectomy alone particularly in patients having inferior retinal breaks.

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