



INDICATION FOR VITRECTOMY IN A TERTIARY CARE HOSPITAL

Dhawal Agrawal¹, Pratik Gheewala², Khushnood Sheikh³, Manisha Shastri⁴

Financial Support: None declared
Conflict of interest: None declared
Copy right: The Journal retains the copyrights of this article. However, reproduction of this article in the part or total in any form is permissible with due acknowledgement of the source.

How to cite this article:

Agrawal D, Gheewala P, Sheikh K, Shastri M. Indication for Vitrectomy in a Tertiary Care Hospital. Ntl J Community Med 2015; 7(1):68-70.

Author's Affiliation:

¹Consultant ophthalmologist, Kota;
²Consultant Ophthalmologist, Bhavnagar; ³Associate Professor;
⁴Prof & Head, Dept. of Ophthalmology, SMIMER, Surat

Correspondence:

Dr. Dhawal Agrawal
Email: dhawalagrawal4@gmail.com

Date of Submission: 29-10-15

Date of Acceptance: 22-01-16

Date of Publication: 31-01-16

ABSTRACT

Introduction: On the basis of development in vitrectomy procedure a whole new subspecialty termed vitreoretinal surgery has evolved over past 30 years. We conducted this study to evaluate usefulness and necessity of Pars plana vitrectomy in today's time.

Methods: A hospital-based cross-sectional study of series of cases was carried out in retina clinic of SMIMER, Surat, Gujarat, From July 2012 to November 2014. 46 patients who underwent vitreoretinal surgeries were reviewed. Demography, duration of symptoms, risk factors and indications and preoperative visual acuity analyzed.

Results: Of 46 patients, preoperatively, 89 % had visual acuity of 2/60 to perception of light. The main indication for TPPV was nuclear drop, in 50 %. Other indication in our study are vitreous haemorrhage (26.1%), proliferative retinopathy (15.2%), trauma (15.2%), dislocated IOL (6.5%), endophthalmitis (6.5%) and retinal detachment (2.2%).

Conclusion: VR surgery is undertaken for a wide range of conditions, but a small number of diagnoses encompass the majority of cases. The main indication for TPPV is Nucleus drop as our centre is a tertiary care referral centre. Main aetiology of vitreous haemorrhage was diabetic retinopathy.

Keywords: Pars Plana Vitrectomy, Nucleus drop, Vitreous haemorrhage, Proliferative retinopathy, Trauma

INTRODUCTION

Vitrectomy was originated by Robert Machemer¹ with contributions from Thomas M. Aaberg, Sr in late 1969 and early 1970. On the basis of development a whole new subspecialty termed vitreoretinal surgery has evolved over past 30 years. With the introduction of a 20-gauge vitrector (0.9 mm), three ports, pars plana sclerotomy system that became the gold standard in vitrectomy surgery². Accelerated progress seen in the development of the 25-gauge and 23-gauge vitrectomy systems over the last few years, contributed to shortened intervention times (suture less) and low-profile invasive interventions (0.6

and 0.5 mm sclerotomy), affording shorter rehabilitation times and less postoperative discomfort³. These technologic advances have helped to expand the indications for vitrectomy greatly

Offering basic ophthalmic care in resource limited setting is difficult, and providing advanced surgical eye treatment is a great challenge. International ophthalmology therefore has traditionally focussed efforts on addressing preventable forms of blindness such as cataracts and nutritional deficiency⁴. In turn, relatively few researchers have examined ways to offer advanced eye care in developing world. A study conducted in an urban area in India estimated that the top 3

causes of blindness were cataract (29.7%), retinal disease (12.5%), and corneal disease (15.4%), and concluded that policy makers should develop a comprehensive long term policy on blindness in addition to efforts focused on cataract⁵.

Pars plana vitrectomy is the final step in management of many diseases. Taking into consideration usefulness and necessity of Pars plana vitrectomy in today's world we would like to do this study with 20 gauge basic vitrectomy setup.

METHODOLOGY

A hospital-based cross-sectional study of series of cases was carried out in retina clinic of SMIMER, Surat, Gujarat, From July 2012 to November 2014. 46 patients who underwent vitreo-retina surgeries were reviewed after ethical committee clearance and consent from patients. 18 years or older patients, without previous history of vitreoretinal surgery were included. Patient's demographic details, history and duration of presenting illness, history of previous ocular or systemic illness were recorded. Visual acuity was measured by using snellens chart and intra-ocular pressure was measured by non contact tonometer. Slit lamp biomicroscopy was done for examination of anterior and posterior segment. Ultrasonography in patients with hazy media was carried out. Investigations like RBS and Blood pressure were taken on OPD basis.

RESULTS

Total 56 patients were analysed over three years period but 8 patients were excluded from study as adults more than 18 years were included in study and 2 patients refused to give consents.

Majority of subject (52%) in present study belong to age group of 40-60 years of age. Thus there was not much difference between male and female population

Most common indication for vitrectomy at our set up in our study is dislocated lens (nuclear drop) followed by vitreous haemorrhage. Most common aetiology for vitreous haemorrhage in our study was diabetic retinopathy followed by blunt trauma vitreous haemorrhage.

DISCUSSION

Majority of population was more than 40 years indicating growing need of vitrectomy with advancement of age. This finding is consistent with a study from Nepal conducted in 2010⁶.

Table 1: Age and gender wise Distribution of the subjects

Profile of Patients	Patients (n=46) (%)
Age of patients	
<40 years	5 (10.8)
40-60 years	24(52.1)
>60 years	17(36.9)
Gender	
Male	24 (52.2)
Female	22 (47.8)

Table 2: Distribution of study population as per the pre-existing ocular and systemic disease

Disease	Frequency (%)
Hypertension	16 (34.8)
Diabetes mellitus	12 (26.1)
Glaucoma	7 (15.2)
Cystoid macular oedema	5(10.9)
Other	2 (4.4)

Others: tuberculosis and asthma patients

Table 3: Indication of vitrectomy

Indications	Male (n=24)(%)	Female (n=22)(%)	Total (%)
Vitreous haemorrhage	4(8.6)	6(13)	10(21.7)
Proliferative retinopathy	1(2.1)	1(2.1)	2 (4.3)
Dislocated intraocular lens	3(6.5)	0	3 (6.5)
Dislocated lens (natural)	11(29.9)	10(21.7)	21(45.6)
Retinal detachment	0	1(2.2)	1 (2.2)
Trauma	4(8.6)	2(4.3)	6 (13.0)
Endophthalmitis	1(2.1)	2(4.3)	3 (6.5)

Table 4: Aetiology for vitreous haemorrhage in our study

Vitreous haemorrhage	Patients (%)
Eales disease	1 (8.33)
Branch retinal vascular occlusion	2 (16.67)
Diabetic retinopathy	6 (50.00)
Traumatic vitreous haemorrhage	3 (25.00)

In present study Male and female ratio is equal while in a study from Nepal⁶ showed more male underwent vitrectomy compared to female which might be due male predominant society and less preference to women's health

The indications for vitrectomy in the Early Treatment of Diabetic Retinopathy Study (ETDRS) in 1987⁷ where 5.6% of all 3,711 enrolled patients underwent vitrectomy were either vitreous haemorrhage (VH) or retinal detachment with or without VH. While in our study it was 4.3%. This could be due to increasing awareness among patients of diabetes mellitus and diabetic

retinopathy as well as introduction of laser therapy which could halt progression of disease.

Our centre being tertiary care centre operating at low cost accepts all referred patients, as major part of ophthalmic complication are cataract related nucleus drop, which form most common indication, as compared with a study from Nepal conducted in 2010⁶ where the main indications for the surgery were VH and with a study from Brazil conducted in 2007⁸ showed that Pars plana vitrectomy was indicated mainly for treatment of rhegmatogenous retinal detachment.

Diabetic retinopathy is still most common aetiology for vitreous haemorrhage in our study similar to a study from USA conducted in 1997⁹, but with increase in proportion suggesting increasing load of diabetic patient.

CONCLUSION

VR surgery is undertaken for a wide range of conditions, but nucleolus drop, IOL dislocation, vitreous haemorrhage and endophthalmitis encompass the majority of cases. The main indication for TPPV is Nucleus drop as our centre is a tertiary care referral centre. Main aetiology of vitreous haemorrhage was diabetic retinopathy

Limitation: This study was conducted among adult patients so results are not applicable to children population. Similarly the study was hospital based study which needs to take in consideration while generalizing the results.

ACKNOWLEDGEMENT

I would like to thank my mentors Dr. Khusnood Sheikh and Dr. Manisha Shastri as it is due to

their keen interest in my work right from its conception to conclusion that I have been able to complete this work. My sincere thanks to Dr. Prakash Patel, Assistant Professors in Community Medicine for his guidance and moral support throughout the study.

REFERENCES

1. MacHemer R. The development of pars plana vitrectomy: a personal account. Graefe's archive for clinical and experimental ophthalmology 1995; 233 (8): 453-68. PMID 8537019.
2. O'Malley C, Heintz RM. Vitrectomy via the pars plana - a new instrument system. Trans Pac Coast Otoophthalmol Soc Annu Meet 1972;53:121-137
3. G K Krieglstein and R N Weinreb. Essentials in ophthalmology- Vitreo Retinal surgery. Progress 3. Verlag Berlin Heidelberg, Springer.2009.3
4. Thylefors B, Negrel AD, Pararajasegaram R, Dadzie KY. Global data on blindness. Bull World Health Organ 1995;73:115-21
5. Dandona L, Dandona R, Naduvilath TJ, et al. Is current eye care policy focus almost exclusively on cataract adequate to deal with blindness in India? Lancet 1998;351:1312-6
6. Subedi S, Sharma MK, Sharma BR, Kansakar I, Dhakwa K, Adhikari RK. Surgical outcome of pars plana vitrectomy: a retrospective Study in a peripheral tertiary eye care centre of Nepal. Nep J Oph 2010;2(3):39-44
7. Flynn HW, Chew EY, Simons BD, Barton FB, Remaley NA, Ferris FL. The Early Treatment Diabetic Retinopathy Study Research Group. Ophthalmology 1992; 99(9): 1351-1357
8. Nobrega MJ, Casagrande C, Nunes RP, Nagel G. Indications for pars plana vitrectomy in a tertiary healthcare service in southern Brazil. Invest Ophthalmol Vis Sci 2004;45: E-Abstract 2007
9. Spraul CW, Grossniklaus HE. Vitreous hemorrhage. Survey of Ophthalmology. 1997;42(1): 3-39.