ORIGINAL RESEARCH PAPER
Volume-6 | Issue-11 | November-2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

OUTCOMES OF PARS PLANA VITRECTOMY WITH OR WITHOUT SILICONE OIL ENDOTAMPONADE IN CASES OF ENDOPHTHALMITIS.

Ophthalmology

Dr Falguni A Chudasama V-R Fellow, Nagri Eye Hospital, Ahmedabad

Dr. Hem Desai 3rd Year Resident Doctor. C.h Nagri Eye Hospital

ABSTRACT

Aim: To compare anatomical media clarity & visual outcomes between vitrectomy with silicone oil or without silicone oil in endophthalmitis.
Methods: A retrospective study of 16 eyes of endophthalmitis was conducted. Group A includes Patients with pars plana vitrectomy (ppv) with silicone oil (SOI)& Group B includes patients with ppv without silicone oil. Patients were followed for 3 months postop.
Results: Functionally useful vision of counting fingers 3 feet was achieved in 6 patients in group A while 1 in group B. Media clarity grade I-II achieved in 6 patients in group in A while only 1 patient in group B. In group B persistence of inflammation found in 2 patients.
Conclusion: Pars plana vitrectomy with silicone oil endotamponade is useful treatment modality which improves the anatomical and functional results in cases of endophthalmitis.

KEYWORDS

Pars plana vitrectomy(PPV), Intra ocular pressure(IOP), Silicone oil injection(SOI), Intraocular lens(IOL)

Introduction:
Endophthalmitis is the most devastating complication of ophthalmic surgeries and penetrating injuries.The treatment of endophthalmitis has historically involved multiple routes of antibiotic administration, including intravitreal, systemic, topical, and subconjunctival. With the advent of pars plana vitrectomy techniques, vitrectomy combined with injection of intravitreal antibiotics became the standard treatment for virtually all forms of endophthalmitis. Complete vitrectomy in patients with endophthalmitis might ensure complete removal of both the vitreoretinal tractions and the microbial load within the vitreous cavity[1].

Currently one of the main indications of silicone oil are complicated cases of infectious endophthalmitis. They help by providing temponade to inadvertent breaks, decreasing the spread of microorganisms by compartmentalizing the eye.Experimental studies suggest that conventional silicone oil has bactericidal activity against various microorganisms[2,3].

Primary aim of this study was to compare Visual Outcome in patients with endophthalmitis undergoing Vitrectomy with silicone oil and without silicone oil. Secondary aim was to compare anatomical media clarity between these two groups.

Material and Methods:
It was a Retrospective Observational study done on 16 Patients from May 2013 to May 2014. Enrollment of Acute post operative or post traumatic endophthalmitis patients was done. Clinical diagnosis was done based on typical signs, symptoms & ultrasound findings. All were initially treated with intravitreal antimicrobial injections of vancomycin (1 mg in 0.1ml), amikacin(0.4mg in 0.1ml) and dexamethazone(0.4mg in 0.1ml) in suspected bacterial endophthalmitis and amphotericin B(5-10ug in 0.1ml) with vancomycin and amikacin in suspected fungal endophthalmitis cases. Second injection was repeated after a day based on gram/KOH report of vitreous tap. Not seeing signs of improvement after injections patients were taken for vitrectomy surgery. Procedures were done under peribulbar anesthesia. Standard 23 G pars plana vitrectomy was performed. If there was no posterior vitreous separation, no attempt was made to induce a vitreous detachment, and the posterior cortical vitreous was not aggressively removed.

It was a goal of surgery to remove at least 50% of the vitreous gel in eyes with no vitreous separation. Lancectomy or IOL explantation was done if required. Endolaser was done and endo-temponade in form of silicone oil 1000cst was injected if required. We followed such 16 cases, 7 with silicone oil and 9 without silicone oil. A minimum of 4 moths follow up was done. On each follow up vision, intraocular pressure, slit lamp examination, indirect ophthalmoscopy, fundus photography were done. Any complications if present were notified and treated. (figure 1 about here)

Results:
Group A includes 7 patients & Group B includes 9 patients.Group A includes 4 posttraumatic, 1post intravitreal & 2 posop endophthalmitis while group B 4 postop & 5 posttraumatic endophthalmitis. (Graph 1,2 about here)

Functionally useful vision of counting fingers 3 feet was achieved in 6 patients in group A while only one in group B. Media clarity grade I-II was achieved in 6 patients in group in A while only 1 patient in group B. In group B persistence of inflammation was found in 2 patients. So 85.71% patients in group A gained functionally useful vision versus only 11.11% in group B. 85.71% patients in group A gained clear madia versus only 11.11% in group B. (Graph 3 about here)

None eye group A developed persistent inflammation or pthysis while two eyes in group B underwent pthysis & two patients in group B developed retinal detachment on follow up for which re ppv with SOI was done. One patient with SOI in group A developed rise in IOP but was controlled with medication. (Table 1,2 about here)

Discussion:
The likely antimicrobial potential of silicone oil has recently been reported in an in vitro study that silicone oil decreases the proliferation of bacteria. Two Mechanisms (1) Antimicrobial effect and (2) Hydrophobic action, are thought to be responsible.[4]

In the literature, endophthalmitis is suspected to increase the risk of retinal detachment. (EVS Study)[1] In our study the final functional visual acuity and anatomical success in the form of attached retina and clear media was much better in group A (PPV with silicone oil) than in group B (PPV without silicone oil). Complications in the form of hypotony, retinal detachment and persistence of infection were much higher in group B than in group A. This findings are much similar to other authors[8] described retinal detachment to occur in 21% of endophthalmitis patients treated with vitrectomy and intraocular antibiotics. Many authors also reported that concurrent endophthalmitis and retinal detachment have a poor visual and anatomical outcome, especially when retinal detachment is an intraoperative complication[9,10,11,12]

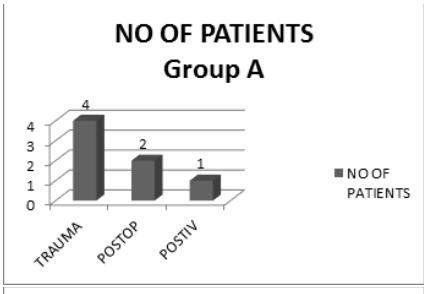
The use of silicone oil can therefore help in controlling the infectious process and reduce the risk of retinal detachment, contributing to a better outcome in the treatment of endophthalmitis[5-7]

Conclusion:
Though Endophthalmitis is very common in our country & known to have very poor prognosis, Our Study on small no. cases suggest that PPV + SOI not only salvage the eye but also provides good visual outcome. Patients treated with silicone oil have a better control of infection, better anatomical stabilization and better final visual acuity.

The role of silicone oil in the treatment of endophthalmitis should be better assessed by a prospective, controlled study and with the highest number of cases to confirm the evidence of this study.

Figure 1: Post of fundus photo of patient from group A

Graph 1 and 2



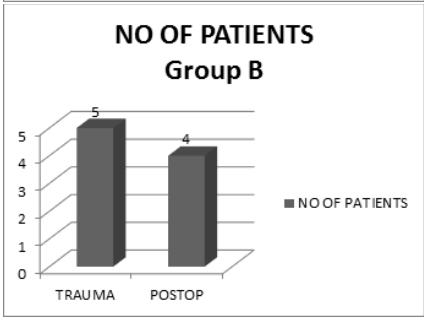


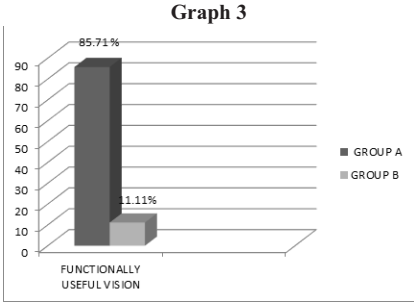
Table 1 (Group A)

Case No	Presenting Vision	Vision At 3 Months Follow Up	Media Clarity
A1	HM,PL,PR4+	Cf 3 ft	Media clear
A2	HM,PL,PR4+	Cf > 3 ft	Media clear
A3	PL+PR4+	Cf 3 ft	Media clear
A4	PL+PR faulty	Cf > 3 ft	Media clear
A5	PL+PR faulty	6/36	Media clear
A6	Cfcf	Cf 3 ft	Media clear
A7	PL+PR faulty	PL+PR faulty	Media haze3+

Table 2 (Group B)

Case No	Presenting Vision	Vision At 3 Months Follow Up	Media Clarity
B1	PL,PR faulty	CFCF	Soft eye
B2	HM,PL,PR4+	CFCF	M haze 3+
B3	HM,PL+PR4+	Cf > 3 ft <6/60	M haze 1+
B4	No PL	no pl	NVP
B5	HM,PL+PR4+	CFCF	M haze 3+
B6	HM,PL+PR4+	CF 2 ft	LE **RD**
B7	PL+PR faulty	cf 1 ft	media clear
B8	Cf 1 ft	cf half feet	media haze+ ,soft eye
B9	Pl, pr faulty	Pl,pr faulty	Soft eye

Graph 3



References:

1. Endophthalmitis vitrectomy Study Group. Results of the Endophthalmitis Vitrectomy Study: A randomized trial of immediate vitrectomy and of intravenous antibiotics for the treatment of postoperative bacterial endophthalmitis. Arch Ophthalmol. 1995;113(12):1479-96.
2. Nurgül Örnek, Teoman Apan, Reyhan Oğurel, Kemal Örnek et al. Antimicrobial effect of silicone oils, IJO April 2014, vol 62 No.4.
3. Siqueira RC, Gil AD, Canamary F, Minari M, Jorge R. Pars plana vitrectomy and silicone oil tamponade for acute endophthalmitis treatment, Arq Bras Oftalmol. 2009;72(1):28-32.
4. Ozdamar A, Aras C, Ozturk R, Akin E, Karacorlu M, Ercikan C. In vitro antimicrobial activity of silicone oil… Retina, Feb 1999, vol 19, 2
5. Suleyman, F. Hakan et al.. Surgical management of postoperative endophthalmitis: comparison of 2 techniques, Journal of cataract & refractive surgery May 2003, vol 29, 5
6. Bali E., et al.. Vitrectomy and silicone oil in the treatment of acute endophthalmitis, Bull Soc. Belge Ophthalmol, 288, 9-14, 2003
7. Rubens Camargo Siqueira et al.. Pars plana vitrectomy and silicone oil tamponade for acute endophthalmitis treatment, Arq Bras Oftalmol. 2009;72(1):28-32
8. Nelsen PT, Marcus DA, Bovino JA. Retinal detachment following endophthalmitis. Ophthalmology. 1985;92(8):1112-7.
9. Brinton GS, Topping TM, Hyndiuk RA, Aaberg TM, Reeser FH, Abrams GW. Posttraumatic endophthalmitis. Arch Ophthalmol. 1984;102(4):547-50.
10. Kattan HM, Flynn HW Jr, Pflugfelder SC, Robertson C, Forster RK. Nosocomial endophthalmitis survey. Current incidence of infection after intraocular surgery. Ophthalmology. 1991;98(2):227-38. Comment in: Ophthalmology. 1991;98(8):1147-8.
11. Mao LK, Flynn HW Jr, Miller D, Pflugfelder SC. Endophthalmitis caused by streptococcal species. Arch Ophthalmol. 1992;110(6):798-801.
12. Vahey JB, Flynn HW Jr. Results in the managementof bacillus endophthalmitis. Ophthalmic Surg. 1991;22(11):681-6. Comment in: Ophthalmic Surg. 1992;23(5):368.