

Combined cataract surgery and trabeculectomy - modified technique - benefits and outcome

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Abstract

Background: Cataract and Glaucoma coexist in a single individual. Combined Cataract and Trabeculectomy Surgery has become the order of the day. **Aims and objectives:** 1. To develop a simple and effective technique in surgical treatment for Cataract and Glaucoma. 2. To make it easier to transform from being a Cataract surgeon alone to a combined Cataract and Glaucoma Surgeon. **Materials and Methods:** 20 Patients diagnosed as Cataract and Primary Open Angle Glaucoma were subjected for the study. Randomly 10 patients underwent the two site procedure and other 10 patients were subjected to the modified single site surgery. IOP measurement before surgery and 45 days after surgery was done in either group. The mean Intraocular pressure before and after surgery recorded to arrive at the results. Filtering bleb formation, Intraoperative and postoperative complication are noted. **Observations and Results:** 10% more reduction in IOP achieved in single site surgery compared to two site surgery. The complications was found to be none in single site surgery compared to two site surgery. The incidence of Filtering bleb formation during the immediate post-operative period in the single site procedure is much better than two site surgery. **Conclusion:** The single site combined cataract surgery and trabeculectomy is as effective an technique as the other surgical techniques in reducing the intraocular pressure to the desired level. In single site Surgery, learning curve is shorter and even the skillful experienced surgeons will find this technique easier and less time consuming without any complications.

Key Word: Glaucoma, Cataract, Trabeculectomy, Single Site Surgery, IOP

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Received Date: 12/01/2019 Revised Date: 05/02/2019 Accepted Date: 17/02/2019

DOI: <https://doi.org/10.26611/1009929>

Access this article online

Quick Response Code:



Website:

www.medpulse.in

Accessed Date:
25 February 2019

AIMS AND OBJECTIVES

1. To develop a simple and effective technique in surgical treatment for Cataract and Glaucoma.
2. To make the procedure of combined cataract and glaucoma surgery easier to transform from being a Cataract surgeon alone to a combined Cataract and Glaucoma Surgeon.

Inclusion Criteria: Patients with Cataract and Primary Open Angle Glaucoma.

Exclusion Criteria: Patients with other types of Glaucomas and other eye illness.

INTRODUCTION

Cataract and Glaucoma are the leading cause for preventable blindness in the world. Cataract and Glaucoma coexist in a single individual. The incidence of simultaneous presence of Cataract and Primary Open Angle Glaucoma in the eyes is on the increase. Combined Cataract Surgery and Trabeculectomy has become the order of the day. Combined procedure reduces the hospital stay and health expenditure of the individuals.

MATERIALS AND METHODS

Conventionally while doing a Combined Small Incision Cataract Surgery with Trabeculectomy and Combined Phacoemulsification with Trabeculectomy surgery, a superior temporal approach is carried out for cataract surgery, apart from the Trabeculectomy procedure done at 12 o'clock position. The triangular or rectangular scleral flap has to be fashioned meticulously to avoid flap tear and button holing for the surgery to be successful. The learning

How to cite this article: Raja Rengaraj, Sivakumar Veerasamy. Combined cataract surgery and trabeculectomy - modified technique - benefits and outcome. *MedPulse International Journal of Ophthalmology*. February 2019; 9(2): 51-53.

curve is longer to achieve a perfect result for the beginners and time consuming for even the experienced surgeon. In order to avoid this cumbersome procedure of flap fashioning and two site procedure, a simple modification in the routine technique is done here. Routinely in Small Incision Cataract Surgery a Sclero-Corneal tunnel incision and in Phacoemulsification a Clear Corneal tunnel incision is made. In this study, we have converted the incision into a pure scleral tunnel incision 7×3mm at superior limbal sclera in Small Incision Cataract Surgery and pure scleral tunnel incision 2.8mm ×3 mm at 11'0 clock position in Phacoemulsification surgery. After making a pure scleral tunnel, cataract extraction and IOL implantation is done as routine. Once the Cataract procedure is completed, in Small Incision Cataract Surgery the anterior lip of the scleral tunnel is cut using the corneal scissors 2 mm on either side of the 12'0 clock position upto the limbus to make a rectangular scleral flap. Whereas in Phacoemulsification the scleral tunnel is cut at either end upto the limbus to make a scleral flap. Then the other steps of Trabeculectomy is carried out as a routine. Postoperative management and follow-up are same as for the routine procedure 20 Patients diagnosed as Cataract and Primary Open Angle Glaucoma who presented at Government Thiruvannam Medical College over a period of 18 months were subjected for the study. Randomly 10

patients underwent the two site procedure and other 10 patients were subjected to the modified single site surgery. IOP measurement before surgery and 45 days after surgery was done in either group. The Intraocular pressure measured before and after surgery to arrive at the results. Intraoperative and postoperative complication are noted. Filtering bleb formation in the immediate post-operative period is noted.

RESULTS

The 20 patients involved in this study had a mean Intraocular pressure of 25.8 \pm 2.2 mm of Hg pre-operatively. Post-operatively the mean Intraocular Pressure measured as 20.6 \pm 1.7 mm of Hg in the two site surgery and 20.1 \pm 1.6 mm of Hg in single site surgery respectively. Button holing of scleral flap experienced in two patients in two site surgery. Post-operative striate keratopathy seen in three patients in two site surgery. No significant intraoperative and postoperative complication experienced in single site surgery. Aqueous drainage conjunctival bleb (filtering bleb) was seen in 7 patients who underwent single site procedure compared to only 3 patients who underwent two site procedure on the immediate post-operative day.

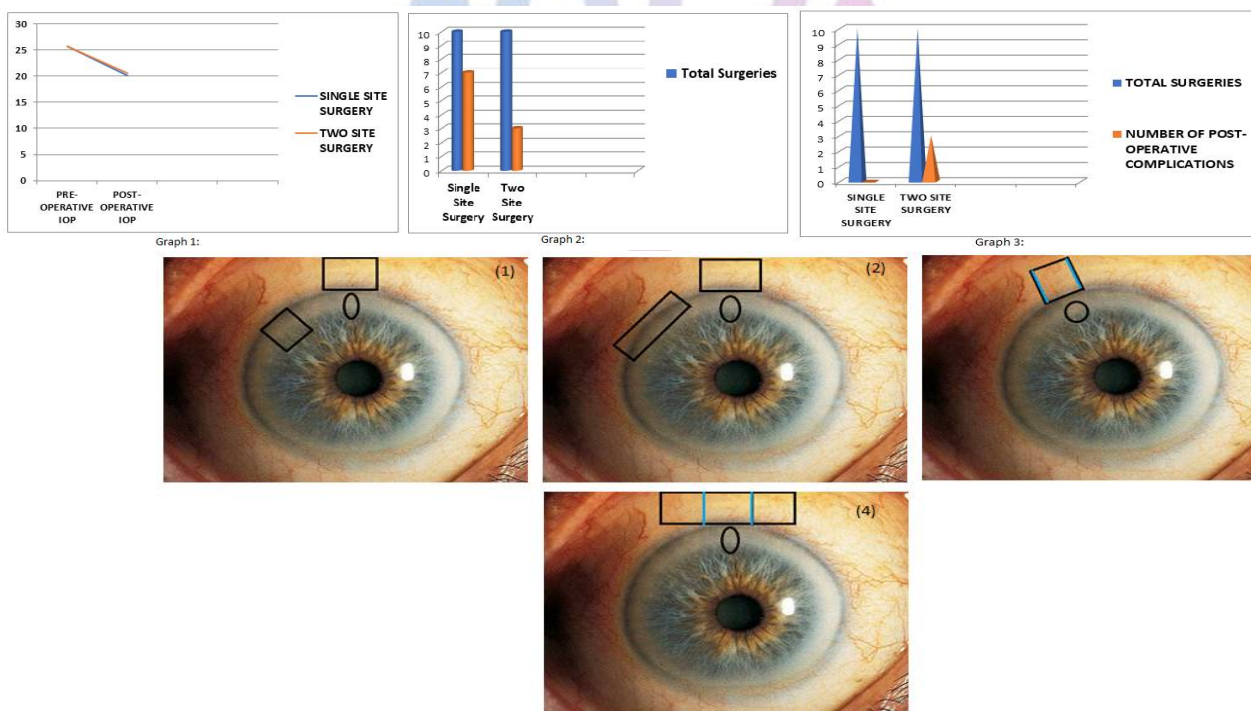


Figure 1: Depicted Two Site Surgery – Phaco+Trabeculectomy

Figure 2: Depicted Two Site Surgery –Sics+ Trabeculectomy

Figure 3: Depicted Single Site Surgery – Phaco+ Trabeculectomy

Figure 4: Depicted Single Site Surgery – Sics + Trabeculectomy

DISCUSSION

Reduction of mean IOP by 5.7 mm of Hg (22%) in the patients who underwent single site surgery compared to a reduction of 5.2 mm of Hg(20%) in two site procedure. 10% more reduction in IOP achieved in a single site surgery. The complications like button-holing of the scleral flap and flap tear is not seen in single site surgery, whereas it was experienced in 2 patients (20 %) in two site surgery. Postoperative striate keratopathy was seen in 3 patients (30 %) in two site surgery compared to none in the single site surgery. Filtering bleb on the immediate postoperative day was observed in 3 patients (30 %) in two site surgery compared to 7 patients (70%) in single site surgery.

CONCLUSION

The single site combined cataract and trabeculectomy surgery is as effective an technique as the other surgical techniques in reducing the intraocular pressure to the desired level. The results are better when compared to the two site surgery. The most important benefit of this single site Surgery is, the learning curve is shorter and every

sutureless cataract surgeon can transform to a combined cataract and trabeculectomy surgeon with ease. Even the skillful experienced surgeons will find this technique easier and less time consuming without any complications.

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Source of Support: None Declared
Conflict of Interest: None Declared