

Squint Surgery and Trabeculectomy as a Combined Procedure

M ASHRAF

Lahore General Hospital, Lahore.

Correspondence to Dr. Maqbool Ashraf, Associate Professor of Ophthalmology, Services Hospital, Lahore

Cosmetic Squint Surgery was indicated in nine patients who also had high intra-ocular pressure in the eye requiring the squint surgery. It was decided to combine the two procedures. The standard technique for the recession and resection of the extra-ocular muscles was used with a slight modification that the size of the conjunctival incisions for the exposure of the extra-ocular muscles was restricted to the minimum level so that the conjunctival flap for the trabeculectomy site could be formed without any interference from the squint surgery. The cosmetic results of the squint surgery remained excellent in all patients and the intra-ocular pressure was also controlled satisfactorily in eight patients out of the nine. It is concluded that if the eye undergoing glaucoma surgery has any cosmetically significant deviation, it can be safely and reliably straightened in one go by combining the two procedures.

Key Words: Squint Surgery; Glaucoma; Trabeculectomy.

This study was designed to evaluate the results of performing the squint surgery and trabeculectomy in one go. This could help in setting the parameters for future recommendations about combining these two procedures. This could help cut down the operative cost, pain, and psychological stress on the patient.

Glaucoma is initially managed medically, using topical drops and adding the systemic medication when the drops alone are not enough. Argon laser trabeculoplasty or YAG laser iridotomy helps in some cases. Surgical treatment is indicated when the medical treatment and the laser treatment fail to control the intra-ocular pressure. Sometimes the medical treatment has to be discontinued because of its side effects, high cost, or the non-availability of the required medication. In these cases the surgical treatment is required despite adequate control of the intra-ocular pressure by the medicines.

Squint and glaucoma can present in the same eye by a number of mechanisms. Some patients have squint to

begin with and the occurrence of glaucoma is a mere coincidence with no cause-effect relationship. Other patients develop low vision in one eye as a result of glaucoma and then develop squint in the same eye after a rather long interval. Yet another group of patients have the problem of squint and glaucoma in the same eye due to some kind of ocular trauma.

Patients and methods

A prospective study of the combined glaucoma and squint surgery was undertaken. All patients who presented between January 1999 and August 2001 were included in this study. Nine patients were found to need both the glaucoma as well as the squint surgery in the same eye. All of these patients were included, irrespective of age, sex, and co-existing ocular and general medical conditions. The following table summarizes the details of the patients selected for this study.

Patient No	Age	Sex	Visual Acuity	Type of squint	Intraocular pressure (Operated Eye)
1.	24 Years	M	R- 6/6. L- NPL	L Exotropia	35mmHg.
2.	25 Years	M	R- PL+. L- 6/6.	R Exotropia	28 mmHg.
3.	18 Years	M	R- 6/6. L- CF	L Exotropia	30mmHg.
4.	45 Years	F	R- 6/60. L- 6/9	R Exotropia	26mmHg.
5.	35 Years	M	R- 6/6. L- NPL	L Exotropia	30mmHg.
6.	50 Years	F	R- NPL. L- 6/9	R Exotropia	40mmHg.
7.	43 Years	F	R- 6/6. L- 6/36	L Exotropia.	26mmHg.
8.	26 Years	M	R- PL+. L- CF	R Exotropia.	40mmHg.
9.	37 Years	F	R- 6/9. L- 6/18	L Exotropia.	35mmHg.

All of these patients had cosmetically unacceptable squint and high intraocular pressure despite full topical anti-glaucoma medication. Informed consent was obtained from these patients to perform the filtration surgery as an additional procedure with their planned squint surgery. None of the patients in our study objected to the idea of having both of these procedures in one go.

Surgical technique

General anaesthesia was used in all of our patients. Horizontal muscle squint surgery was performed according

to the amount and type of the squint. It was aimed at full correction, with a margin for slight over correction for all of our patients who had exotropia. The standard procedure for the recession of the lateral rectus and the resection of the medial rectus was performed in each patient. The conjunctival incision was kept to the minimum to isolate the muscles and perform the necessary resection or recession. The muscles were re-attached to the sclera using the 6/0 vicryl sutures. The conjunctival incision was closed with interrupted 8/0 vicryl sutures.

After the completion of the squint surgery, a superior rectus bridal suture was passed to obtain control over the position of the globe. A fornix-based conjunctival flap was formed and the underlying sclera was cleared of any tenon attachments. Bleeding points were sealed with bipolar wet field cautery. A limbus-based partial-thickness rectangular scleral flap was raised and a piece of sclera including a portion of the trabecular meshwork was excised. Peripheral iridectomy was performed. The scleral flap was sutured back to its site using 10/0 nylon sutures. The tension of these sutures was kept at a level to make sure that there was some slow but definite continuous oozing of aqueous from the trabeculectomy site. The conjunctival flap was sutured using the 10/0 Nylon suture to keep the anterior border of the flap in firm contact with the limbus.

A subconjunctival injection of dexamthasone and gentamycin was given at the end of the surgery and the eye was patched. The eye patch was removed after 24 hours and topical antibiotic/steroid drops started. A follow-up was arranged after one week, two weeks, one month, three months, and six months.

Results

Cosmetically acceptable result was achieved in each of our patients, with no gross residual exotropia. The condition of the filtration bleb was satisfactory in all of our patients. There was no complication of excessive leakage from the filtration sit, causing flat anterior chamber and hypotony. There was no choroidal detachment. One patient had a mild hypheama, which resolved within the first week. The control of intra-ocular pressure was satisfactory without any antiglaucoma medication in eight of our patients. One patient required topical beta-blocker drops to keep the intra-ocular pressure below 21 mmHG.

Discussion

There has been a general fall in the rate of squint surgery, reported in the 1970s and 1980s^{1,2}. The reasons for this included a reduction in the incidence of children with esotropia,¹ improved screening² and better child health³. Most of our patients had poor vision in the eye having the squint and uncontrolled glaucoma. Different surgical procedures can be used to treat the squint: muscle recession, with or without muscle resection^{4,5}. We used both recession as well as resection in each of our patients.

Early postoperative bleb leak is a common complication of trabeculectomy⁶⁻¹⁰. It has been reported to be more common following trabeculectomy with fornix based flaps than limbus based flaps¹¹. However, we used the fornix based conjunctival flap in our patients because it is known to yield a more diffuse filtration bleb¹².

The presenting problem for which the patients sought help was squint rather than glaucoma. These patients were primarily depending upon their other eye for vision. They just wished to have their squint corrected. All of them were quite pleased with the results of the cosmetic squint surgery. The control of intra-ocular pressure was like a bonus. Many of these patients would not have sought help for the surgical treatment of their glaucoma. This would have increased the chances of their glaucomatous eyes to lose whatever vision was left in them. The control of pressure would certainly reduce the risk of many of these eye from developing corneal decompensation with macrobullae, and ultimately, painful blind eyes. It is noted that there were no adverse effects of combining these two procedures.

The number of cases falling into this category is not many, but if there is any patient who has a high intra-ocular pressure in the squinting eye, he or she will be best served by performing both glaucoma and squint surgery in one go.

References

1. Carney CV, Lysons DA, Tapley JV. Is the incidence of constant esotropia in childhood reducing? *Eye* 1995;9 (Pt 6 Su):40-411.
2. Ferguson JA, Goldacre MJ, Henderson J, *et al*. Ophthalmology in the Oxford region: analysis of time trends from linked statistics. *Eye* 1991;5 (Pt 3):379-84.
3. Finlay R. Number of squint operations in Britain has decreased. *BMJ* 2000;320:938.
4. Boschi MC. Nystagmus surgical treatment by means of M Focositendon lenthening. *Boll Ocul* 1991;70:363-6.
5. Demer JL, Miller JM, Poukens V. Surgical implications of the rectus extraocular muscle pulleys. *J Pediatr Ophthalmol Strabismus* 1996;33:208-18.
6. Batterbury M, Wishart PK. Is high initial outflow of benefit in trabeculectomy? *Eye* 1993;7:109-12.
7. Shuster JN, Krupin T, Kolker AE, *et al*. Limbus- v fornix-based conjunctival flap in trabeculectomy. A long-term randomized study. *Arch Ophthalmol* 1984;102:361-2.
8. Tezel G, Kolker AE, Becker B. Comparative results of combined procedures for glaucoma and cataract: II. Limbus-based versus fornix-based conjunctival flaps. *Ophthalmic Surg Lasers* 1997;28:551-7.
9. Lemon LC, Shin DH, Kim C, *et al*. Limbus-based vs fornix-based conjunctival flap in combined glaucoma and cataract surgery with adjunctive mitomycin C. *Am J Ophthalmol* 1998;125:340-5.
10. Traverso CE, Tomey KF, Antonios S. Limbal- vs fornix-based conjunctival trabeculectomy flaps. *Am J Ophthalmol* 1987;104:28-32.
11. Austin MW, Wishart PK. Reformation of the anterior chamber following trabeculectomy. *Ophthalmic Surg* 1993;24:461-6.
12. Agbeja AM, Dutton GN. Conjunctival incisions for trabeculectomy and their relationship to the type of bleb formation—a preliminary study. *Eye* 1987;1:738-43.