Ex-PRESS Miniature Glaucoma Shunt in Treatment of Refractory Glaucoma

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A B S T R A C T

Refractory glaucoma in a complicated type of glaucoma of different ethyologies with one same characteristic – intraocular pressure of great resistance to therapy. There are different methods of treatment in such glaucomas, primary surgical options. Ex-PRESS miniature glaucoma shunt implantation was our treatment of choice. In our group of patients we achieved stable intraocular pressure values in 4 month period of time with no serious or unexpected complications.

Key words: glaucoma, Ex-PRESS, drainage implants, glaucoma valve, tube surgery

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Methods

Ten eyes in 10 patients with refractory glaucoma, with high intraocular pressure on maximum antiglaucomatous medical therapy. Four patients had pseudoexpholiative glaucoma, 3 neovascular glaucoma, 1 secondary glaucoma and 3 patients with primary open angle glaucoma that already had trabeculectomy. We used parabulbar anesthesia with supplemental intracameral lidocaine injection. We performed shunt implantation in standard procedure without complications, implants were well positioned. In 3 patients we performed combined two-site surgery PHACO with implantation of acrylic IOL followed by filtrating surgery – Ex-PRESS miniature glaucoma shunt implantation. All surgery was performed by the same surgeon, in Department of Ophthalmology, General Hospital Zadar. Postoperatively we recommended combined antibiotic and steroid drops every four hours in the first week followed by taper. Evaluated parameters were intraocular pressure, visual acuity and slit lamp examination on 1st, 7th postoperative day, 1 month and monthly 4 months after surgery.

Results

Baseline intraocular pressure was 32–56 mmHg, baseline visual acuity was light perception in 4 patients, hand
motion in one patient and 0.01–0.08 in 5 patients. Intraocular pressure in 1st postoperative day was 10–14 mmHg in 8 patients and 2 patients had hypotonia, visual acuity was light perception in 4 patients, hand motion in 1 patient and 0.03–0.08 in 5 patients, slit lamp examination showed flat anterior chamber in 2 patients, shallow in 3 patients and normal anterior chamber depth in 5 patients. Seventh postoperative day measured intraocular pressure was 10–20 mmHg, visual acuity was light perception in 1 patient, 0.03–0.1 in 5 patients, slit lamp examination showed shallow anterior chamber in 2 patients and normal anterior chamber depth in 8 patients. Four months after surgery intraocular pressure was 12–18 mmHg, visual acuity light perception in 4 patients, hand movements in 1 patient, 0.07–0.8 in 5 patients, slit lamp examination showed normal anterior chamber depth in all patients. None of the patient used any medical therapy 4 months after surgery. Table 1 presents patients findings prior the procedure and in postoperative period during follow up. Table 2 presents only IOP findings in the same period of time.

### Discussion and Conclusion

The major objective of treatment in glaucoma is the decrease of IOP while maintaining the patient’s vision and quality of life. Despite the possibilities some types of glaucoma remain refractory to treatment with remanence of high IOP and further progression of the disease. Studies showed that shunt surgery and trabeculectomy with MMC are both viable surgical options for glaucoma patients who undergone prior failed filtering surgery. Results of the Tube Versus Trabeculectomy Study (TVT Study) support the expanding use of tube shunts. The two most commonly use devices are Ahmad and Berveldt valve. Studies report similar baseline characteristics and similar number of intraoperative complications for both devices. There also studies evaluating additional glaucoma drain-
age implant (GDD) insertion in eyes with refractory glaucomas that have failed primary GDD. These studies agree that the GDD insertion is the best option in treating refractory glaucoma even in cases of failed primary GDD. Ex-PRESS miniature glaucoma shunt is an alternative in anti-glaucoma surgery. Standard trabeculectomy and Ex-PRESS shunt are reported to have similar efficacy and safety profile while the cost of the shunt can make its use unjustified, especially as a primary procedure. In some glaucoma cases not responding to maximum antiglaucoma therapy as in cases of prior and unsuccessful trabeculectomy the implantation of Ex-PRESS miniature glaucoma shunt is effective in lowering of intraocular pressure as the main expected outcome of the procedure. There are also reports of comparison of using MMC or Ologen with Ex-PRESS – they suggest similar surgical success in both cases. In our cases we used Ex-PRESS miniature glaucoma shunt with MMC in group of refractory glaucoma cases of different etiologies. In all cases we achieved the desired result – lowering the intraocular pressure and avoiding any topical antiglaucomatous therapy. Visual acuity after surgery was the same or better, especially in patients with combined cataract surgery and shunt implantation. We also had no unexpected adverse effects and complications confirming excellent safety profile.

REFERENCES


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EX-PRESS MINIATURE GLAUKOMA SHUNT U TERAPIJI REFRAKTERNOG GLAUKOMA

SAŽETAK

Refakterni glaukom je komplicirani glaukom, različite etiologije. Zajednička karakteristika svih tipova refrakternog glaukoma je povišen intraokularni tlak koji ne reagira na terapiju. Različite su metode liječenja takvog tipa glaukoma uglavnom operativne. Impalntacija Ex-PRESS miniature glaukoma shunta bila je naša metoda izbora. U našoj grupi pacijenata nakon operacije i u periodu praćenja od 4 mjeseca postigli smo stabilne vrijednosti intraokularnog tlaka bez neočekivanih komplikacija.