Efficacy and safety outcomes of Mitomycin -C augmented immediate sequential bilateral Preserflo® MicroShunt surgery: a real-world experience from a case series

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Introduction

- Minimally invasive bleb surgery (MIBS) or Preserflo® MicroShunt surgery has revolutionized traditional glaucoma filtration surgery over the last decade.
- It has been widely used to treat primary or secondary open-angle glaucoma with a promising long-term efficacy and safety profile[1,2].
- Fewer intra-operative and post-operative challenges, less surgical time, and more predictable outcomes than traditional filtration surgery (trabeculectomy)[3,4] make it favourable to treat bilateral conditions.
- This study describes the real-world experience with Mitomycin-C augmented immediate sequential bilateral Preserflo micro-shunt surgery.

Methodology

- All the patients who underwent bilateral standard Preserflo® MicroShunt implantation from November 2019 to April 2024 were studied retrospectively.
- Surgeries were performed as 02 aseptically separated procedures on the same theatre list.
- The microshunt was implanted as a stand-alone procedure with adjunctive use of topical mitomycin-C (0.4 mg/ml) for 3-4 minutes.
- The patients were reviewed at regular intervals as clinically indicated.
- IBM-SPSS software was used for statistical data analysis.
- A paired samples t-test was used to analyze the significance of the mean difference between groups.

Outcome measures

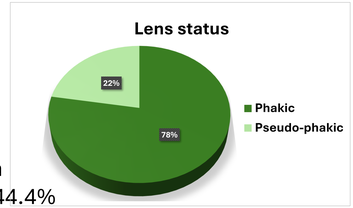
The primary clinical outcome measures
-surgical failure
- intraocular pressure (IOP) > 21 mmHg or < 20% reduction from the baseline, IOP ≤ 5 mmHg, Reoperation, loss of light perception[4]

-Qualified and complete success at 06 months.

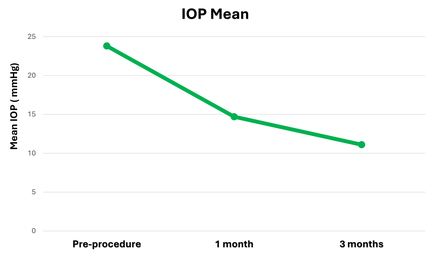
Secondary measures
-Mean reduction of IOP and glaucoma medications, visual acuity, complications, postoperative interventions, and reoperations.

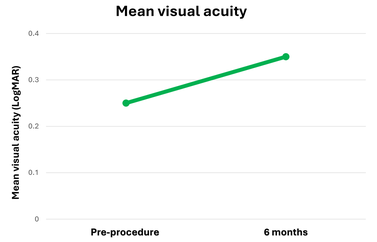
Results

- Number of patients-09
- Total number of eyes- 18
- M:F= 3:6
- 94.4% had primary open-angle glaucoma
- Caucasians – 55.5%/ Afro-Caribbeans – 44.4%



- Mean (± standard deviation [SD]) IOP decreased from 23.8±4.9 mmHg at baseline to 14.7 ± 5.0mmHg at 1 month(P<0.001), to 13.5 ± 6.5 mmHg at 3 months (P < 0.001), and to 11.1 ± 6.3 mmHg at 6 months (P<0.001).
- The mean number of IOP-lowering medications declined from 4.1±1.0 at baseline to 0.2± 0.9 at 06 months (P< 0.001).
- 94.4% of patients achieved complete surgical success at 06 months.





- **Complications**
  - One patient required reoperation at 06 months.
  - One T2DM patient (02 eyes) developed early ocular hypotony with ciliary body shutdown. Both visual acuity and IOP were restored at 03 months with oral steroids and escalation of diabetic treatment.

Conclusion

- This study shows the potential of the safe application of Preserflo® MicroShunt in glaucoma patients who require bilateral surgery.
- **Both the IOP-lowering effect and reduction of the mean number of IOP-lowering medications were statistically significant at 06 months.**
- Further follow-up studies are required to establish the long-term efficacy and safety profile.
- This real-world data can be used to develop guidelines in the future for mitomycin -C augmented immediate sequential bilateral Preserflo micro-shunt surgery.

Reference

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