MAR Ophthalmology and Ocular Therapeutics (2025) 8:3

Research Article

Trabeculectomy with Implantation of Ologen in Seventy Five Patients in Government Eye Hospital Khartoum, Sudan

Mohamed Siddig *

*Correspondence to: Mohamed Siddig, Sudan.

Received: 25 Sep 2025

Published: 04 Oct 2025

Background

The surgical management of refractory glaucoma remains a major challenge. In this study, the Ologen implant, abiodegradable collagen matrix, was used in a selected group of patients to enhance the outcomes of trabeculectomy by modulating wound healing and reducing postoperative fibrosis

Methods

This was a prospective, non-randomized study that included 75 patients with refractory glaucoma who underwent trabeculectomy combined with Ologen implantation in one eye at the Sudan Eye Hospital – Khartoum, during the period 2005–2008. Refractory glaucoma was defined as the failure of medical, laser, surgical, or combined therapies. In this procedure, the Ologen implant was placed over the scleral flap after trabeculectomy. Intraocular pressure (IOP), number, and type of medications were assessed before surgery

Surgical Technique

Under local peribulbar anesthesia, a fornix-based conjunctival flap was created, followed by cauterization of the conjunctival and episcleral vessels to reduce bleeding. A triangular scleral flap was fashioned, and trabeculectomy with peripheral iridectomy was performed. The scleral flap was repositioned and sutured with 10-0 nylon. The Ologen implant was then placed over the flap, and the conjunctiva was closed

Results

Among the 75 patients (60 males and 15 females), ages ranged between 55 and 68 years, with a mean age of 65 years. The mean preoperative IOP ranged from 26 to 30 mmHg. Following surgery, patients were followed up regularly from one week to one year (with visits every three months). At one year, mean IOP was reduced to approximately 16 mmHg. Intraoperative and postoperative complications were rare; only two patients developed cataract during follow-up.

Conclusion

Preliminary results suggest that trabeculectomy with Ologen implantation is a safe, simple, and effective surgical option for refractory glaucoma. The implant appears to improve wound healing by tissue engineering modulation and reduce fibrosis compared to conventional trabeculectomy. However, larger studies with longer follow-up, are needed to validate these finding**.**

References

1.Cillino S, Di Pace F, Cillino G, Casuccio A. Biodegradable collagen matrix implant versus mitomycin-C in trabeculectomy: five-year follow-up. BMC Ophthalmol. 2016;16:24**.**

2. Johnson MS, Sarkisian SR. Using the Ologen collagen matrix implant in glaucoma surgery. Glaucoma Today. 2009;7(2):32–

3. Rosentreter A, Schild AM, Jordan JF, Krieglstein GK, Dietlein TS. A prospective randomized trial of trabeculectomy using mitomycin C vs Ologen implant in open angle glaucoma. (Lond). 2010;24(9):1449–57**.**

4.Senthil S, Rao HL, Babu JG, Mandal AK, Garudadri CS. Comparison of outcomes of trabeculectomy with mitomycin C versus Ologen implant in primary glaucoma. Indian J Ophthalmol. 2013;61(7):338–42**.**

5.Lee JWY, Yau GSK, Yick DWF, Yuen CYF. Long-term outcome of trabeculectomy with Ologen implant in Chinese patients with primary open-angle glaucoma. Medicine

(Baltimore). 2015;94(8):e546

Medtronic