



## Late and Spontaneous Extrusion of Xen45 Glaucoma Gel Stent

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## Case Report

In October 2016, a 84-year-old woman with primary open-angle glaucoma and atrophic maculopathy, bilaterally pseudophakic, underwent Xen45® Glaucoma Gel Stent (XEN-GGS; Allergan, Irvine, CA, USA) implantation in her left eye for an increase of intraocular pressure (IOP) to 23 mmHg despite antiglaucoma medical therapy. Surgery was performed in our hospital, under local anaesthesia according to the manufacturer's instructions. An injection of 0.1 ml mitomycin C (MMC) 0.2 mg/ml was performed in the subconjunctival space to reduce postoperative scarring at the filtration site. Clear corneal incisions were created and the anterior chamber (AC) was filled with viscoelastic. The device, preloaded in the XEN Injector, was inserted ab interno towards the superonasal quadrant, placed to anterior trabecular meshwork, advanced through the sclera and released under the conjunctiva. The corrected placement was confirmed by intraoperative gonioscopy. The viscoelastic was washed out creating a subconjunctival bleb and confirming patency of the device. At the end of surgery, the recommended placement of XEN-GGS 1-2-3 mm (AC, sclera, and subconjunctival area) was confirmed and surgery completed.

Postoperative treatment consisted of combination netilmicin and dexamethasone (Netildex®) eyedrops instilled four times a day for one month followed by a slow taper over the second month. All glaucoma medications were discontinued on the day of surgery. Postoperative visits took place on day 1, day 7, day 21, 2 months and 4 months to continue follow-up every 6 months. The subsequent follow-ups were uneventful, with good IOP control between 8 and 14 mmHg. The filtering bleb appeared diffuse, broad and low elevated.

Four years later, in November 2020, the patient presented to the emergency department complaining of foreign body sensation in her left eye, lasting for 2 days. On presentation, the visual acuity was stable compared to baseline (left eye: 20/32; right eye: 20/50). The slit lamp examination revealed an erosion of the conjunctiva with exposure of the distal tip of XEN-GGS, exhibiting clear leakage (Fig. 1 A). IOP was 8 mmHg, AC well formed and no choroidal detachment. No signs of ocular inflammation or infection were observed. XEN-GGS was carefully extracted with forceps, without rupture, at the slit lamp (Fig. 1B). After that, we treated the patient with local antibiotic 4 times/day for 7 days. Two days later the patient reported that the foreign body sensation had disappeared and the IOP remained at a normal value (10 mmHg). The patient was followed weekly during the next month with a quiet eye and a IOP in the low teens without antiglaucoma medications (Fig. 2).

Several factors may have predisposed to the XEN-GGS extrusion in our patient.

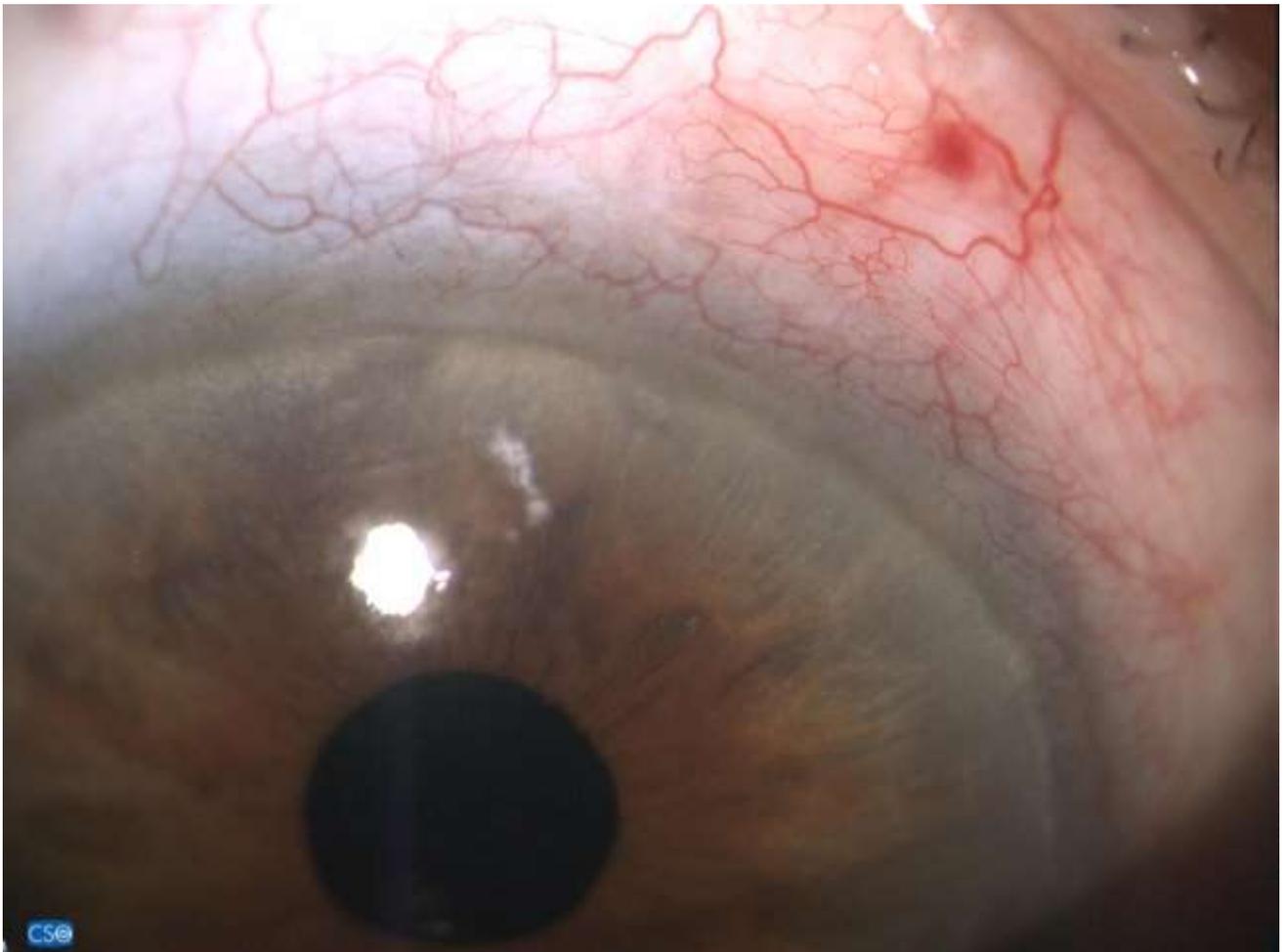
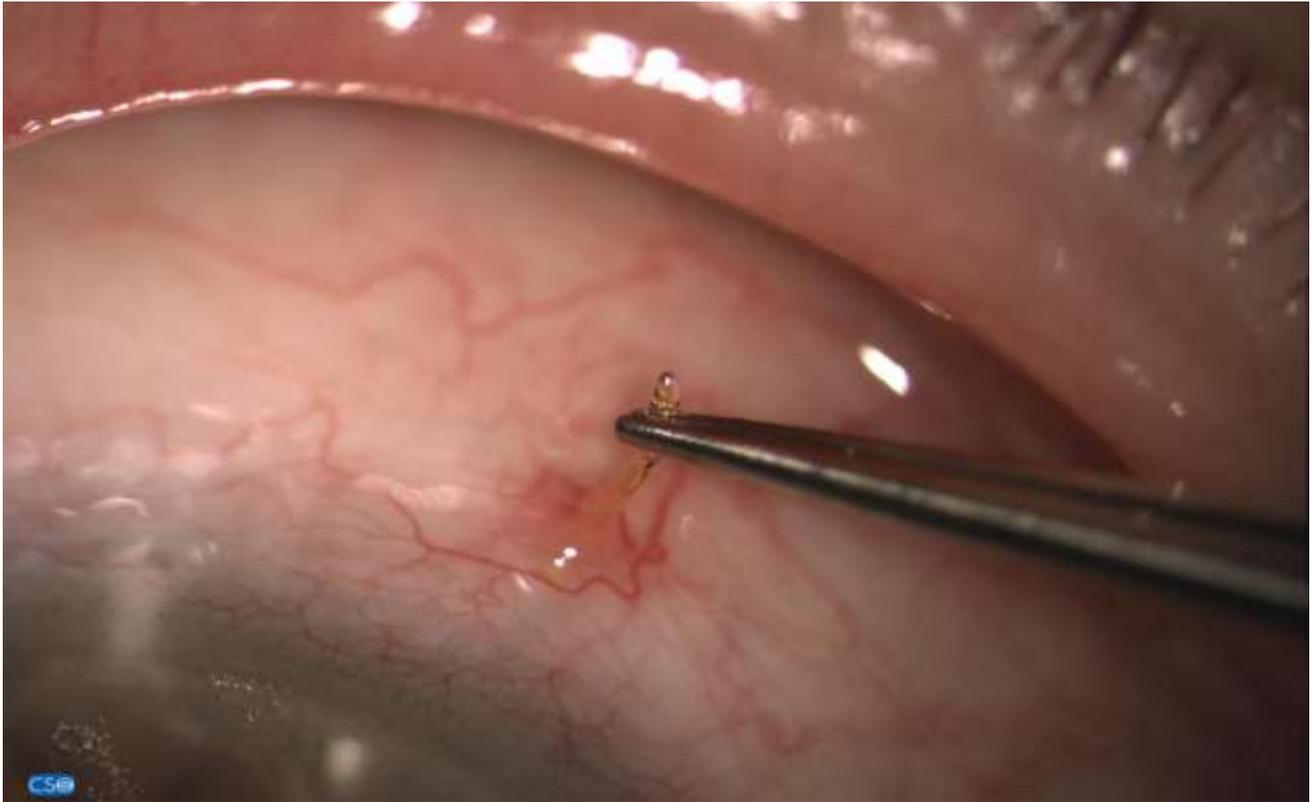
Firstly, as previously reported (Lim et al. 2018), low elevated blebs are at higher risk of leakage, due to the friction of the implant against the overlying conjunctiva, which can cause conjunctival erosion also leading to serious complications as blebitis or endophthalmitis.

Other possible risk factors of conjunctival erosion are the late effect of MMC on the tissue and the prolonged use of glaucoma eyedrops leading to chronic local inflammation as well as thinning of the conjunctiva (Arnljots et al 2019). Furthermore, it is well recognized that conjunctival tissue degenerates in the elderly (Abdel-Khalek et al. 1978). All these factors may have contributed to XEN-GGS extrusion in our old patient. Moreover, stopping of all topical therapy as postoperative steroids and antiglaucoma medications may have caused drying of the thin conjunctiva inducing irritation; this in turn led to the patient rubbing the eye, resulting in conjunctival erosion and exposure of XEN-GGS. In our report no complications worthy of note were detected and IOP was normal without antiglaucoma medication in according with the hypothesis that even if the entire XEN-GGS dislocates there is a possibility that the channel between the AC and subconjunctiva is maintained with achievement of control of IOP.

XEN-GGS is effective for lowering IOP, serves to reduce antiglaucoma medications, and may save surgical time compared to conventional glaucoma surgery. The correct positioning of the implant is mandatory for preventing complications (Lenzhofer et al 2019). This case report demonstrates that positioning XEN-GGS in or under Tenon layer rather than subconjunctivally, guarantees more stability of the device, reduces incidence of extrusion and is highly recommended in the elderly. To our knowledge this is the first report of spontaneous extrusion of XEN-GGS after four years.



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## Patient Consent

Informed written consent for publication has been obtained from the patient. This report does not contain any personal information that could lead to the identification of the patient.

## Declaration of conflicting interest

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