

# Gulani Iceberg Technique

This suture-free, three-step pterygium and pinguecula removal technique employs mitomycin C, amniotic tissue, and fibrin sealant.

BY ARUN C. GULANI, MD

**P**terygium and pinguecula, two of the most common diseases of the ocular surface, present in various tissue distributions and vascular patterns. Both can vary from small, atrophic lesions to large, aggressive fibrovascular growths that, in advanced cases, can compromise vision.<sup>1,2</sup> Although prolonged exposure to sun may instigate formation,<sup>3</sup> anyone can develop these growths.

In my Eyetube video, "Pterygium Excision: Iceberg Technique," (eyetube.net/?v=dohuk), I share a method of removal that I have performed for more than a decade, on 500-plus patients, with consistent results.<sup>4-6</sup> This sutureless procedure uses human placenta as a scaffold bandage and chemical facilitator.<sup>5,6</sup> Patients in most cases can expect clear, white eyes 1 day postoperatively and are able to return to work and other daily activities within a couple of days. The recurrence rate after use of the iceberg technique is less than 0.5%, compared with prevalent rates of 5% to 38% with other excision techniques.<sup>7</sup>



eyetube.net

eyetube.net/?v=dohuk

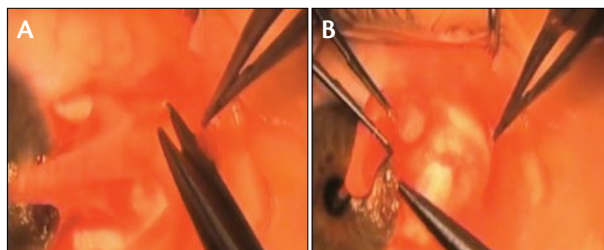


Figure 1. The pterygium is traced down to its roots (A) and excised (B).

This is achieved with a tire-tool technique, whereby two forceps are used to hold the conjunctiva (Figure 2).

**Step No. 4: Injecting a fibrin sealant.** Next, a fibrin sealant (Tisseel Glue; Baxter Healthcare) is delivered beneath the amniotic graft in two separate syringes. A cellulose sponge is used to squeegee the graft on the sclera and to swipe the fornices for excess glue (Figure 3). Using the 64-gauge blade in a single, circumlinal motion, the excess amniotic graft is trimmed along the limbus. The cut should be deep enough to penetrate the amniotic graft but not the cornea. Lastly, the excessive amniotic tissue is peeled away.

## STEP-BY-STEP TECHNIQUE

As depicted in the video, the iceberg technique involves completely removing the lesion down to its roots, applying mitomycin C, placing an amniotic graft, and injecting a fibrin sealant below the graft.

**Step No. 1: Removing the lesion.** I begin with a fixation stitch, placed at the limbus opposite from the pterygium or pinguecula. After the whole lesion is delineated with intralésional anesthesia, the pterygium or pinguecula is excised at the level of its roots, using retro-resistance to guide in cutting the tentacles (Figure 1). Then, the limbal portion is peeled back, starting from the cornea, with the aid of centripetal resistance, and the cornea, limbus, and sclera are cleared with fast, smooth movements of a 64-gauge blade.

**Step No. 2: Applying mitomycin C.** At this point, four pieces of cellulose sponge soaked in mitomycin C (0.04%) are rolled under the conjunctiva, avoiding sclera, for 20 seconds, followed by a flush with balanced saline solution.

**Step No. 3: Placing an amniotic tissue graft.** An amniotic tissue graft is placed onto the bare sclera and swept into place under the medial, superior, and inferior conjunctiva.

## INTEGRITY OF THE OCULAR SURFACE

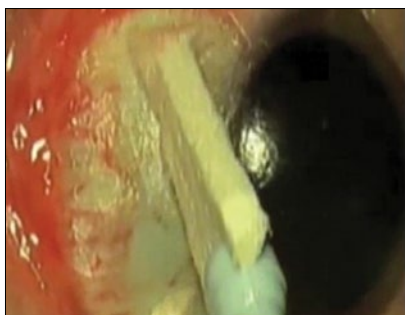
The importance of the iceberg technique goes beyond successfully removing the pterygium or pinguecula, as it allows the surgeon to maintain or improve the integrity of the underlying ocular surface. In my opinion, this elevates the procedure from a simple repair of the ocular surface defect to the level of a cosmetic or refractive surgical procedure. Removal of the corneal scarring and pterygium or pinguecula tissue with the iceberg technique results in a visually pleasing white eye, a clear optical system, and functional improvements in the form of returned mobility of extraocular movements and

### TAKE-HOME MESSAGE

- The Gulani iceberg technique has four steps that entail removing the lesion, applying mitomycin C, placing an amniotic graft, and injecting a fibrin sealant below the graft.
- It is crucial to excise the pterygium or pinguecula at the level of its roots, using retro-resistance to guide the cutting of the tentacles.



**Figure 2.** The conjunctiva is held with two sets of forceps.



**Figure 3.** A cellulose sponge is used to squeegee the graft on the sclera and to swipe the fornices for excess glue.

elimination of induced astigmatism caused by pull of the pathologic tissue.

Although good results are consistent in our practice, I emphasize to all patients the seriousness of surgery and caution them about setting realistic expectations. I explain there are no guarantees in any case.

When performing ocular surface surgery, we should aim for a similar cosmetic outcome as is achievable with premium cataract and

laser refractive surgery. Use of this no-stitch amniotic graft technique, as shown in my video, can provide patients who were once contraindicated for LASIK, laser vision correction, or premium lens implantation due to a poor ocular surface with the opportunity to now undergo refractive correction.<sup>8</sup> Additionally, in patients who have previously undergone laser vision correction or premium lens surgery, the iceberg technique provides a method to maintain their excellent vision, as it does not distort LASIK flaps, induce keratitis, or cause corneal distortion.<sup>9</sup> ■

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