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ABSTRACT TITLE:
Symblepharon Formation Secondary to a Pterygium Regrowth

Abstract:
A pterygium is a wing-shaped fibrovascular growth of conjunctival tissue over the cornea. This report illustrates an adverse effect of pterygium regrowth with no prior use of a graft, specifically, symblepharon formation with this patient.

Case History
-48 year old Hispanic Male with a complaint of foreign body sensation in the right eye lasting several months.
-An additional complaint of occasional diplopia, only on right gaze, first noticed several months ago.
-Medical history was unremarkable.
-Ocular history consisted of three previous pterygium excisions, each nasally on his right eye. The first excision occurred in Mexico in 1989, followed by two more excisions in 2011 and 2012. No report of a graft, only excised.
-No reported systemic or ocular medications, aside from artificial tears as necessary.
-No reported allergies to medications or otherwise.

Pertinent findings
-BCVA: OD 20/200 with -4.00 -2.00 x175 and no improvement with pinhole and OS 20/20- with -2.00 -0.50 x180.
-Pupils: 4mm in dim illumination and were equally round and reactive to light.
-Confrontation visual fields: constricted nasally OD consistent with the pterygium and were full OS.
-EOM’s: Full in all gazes, except for a slight mechanical restriction OD on right gaze with a reported mild occurrence of diplopia. The diplopia measured, approximately, 4 prism diopters base-out.
-Intraocular Pressure: Measured using TonoPen due to surface irregularity and was 10mmHg OD and 14mmHg OS.
-Slit lamp examination revealed a 4.5 mm nasal pterygium adjoined by a symblepharon to the nasal inferior palpebral conjunctiva in the right eye. The right cornea also showed significant scarring secondary to previous pterygium excisions. A 3.5 mm pterygium, also encroaching the visual axis, was noted on the fellow eye, without any previous surgical history and no symblepharon.
-A dilated fundus examination was within normal limits OU.
-Assessment: This was a recurrent growth of the pterygium that formed a symblepharon to the inferior palpebral conjunctiva.
-Plan: Schedule for a bare sclera pterygium excision. Due to the size of the
pterygium and the extent of the symblepharon, a limbal autograft would not provide enough tissue. Therefore, amniotic membrane transplantation was scheduled in conjunction with mitomycin C to assist with improved prognosis and fornix reconstruction.

**Differential diagnosis**
- Primary: Pterygium regrowth secondary to previous bare sclera pterygium excisions with no grafts according to the patient.

**Other differential diagnoses:**
- Ocular cicatricial pemphigoid (OCP) was ruled out due to the symblepharon being unilateral, with no other mucous membrane involvement. The patient's age is also much younger than the average age for OCP, which presents most commonly over the age of 60.
- A symblepharon formation secondary to a chemical injury, however, the patient reported no history of a chemical injury to his eye or face.

**Diagnosis and discussion**
A pterygium is a benign fibrovascular proliferation of the bulbar conjunctival tissue onto the cornea. In varying cases, the appearance can be the primary factor causing the patient to seek treatment. The other primary reason patients seek care is due to the irritation, redness, or progressive changes in refractive power. Pterygiums have been found to have an increased prevalence in low-latitude regions, with a decreasing prevalence as the latitude increases. Additionally, males are affected more than females. There was, also, a positive correlation between prevalence and increasing age. Ultraviolet radiation is thought to be the major contributor to the etiology of a pterygium, as well as, chronic ocular surface irritation.
Unique features of this case are the multiple regrowths of this patient’s nasal pterygium after several previous bare sclera pterygium excisions with no history of an autograft or allograft. This regrowth formed with a concomitant symblepharon connecting the inferior palpebral conjunctiva to the site of the pterygium regrowth on the right eye nasal cornea and bulbar conjunctiva.

**Treatment, management**
Due to the complexity of this case, a tailored approach was used. The procedures employed included a symblepharon lysis with a bare sclera pterygium excision using an amniotic membrane graft over the bare sclera. The antimetabolite, mitomycin C, was used to help decrease the chances of recurrence. A rubber bolster was used in the inferior fornix to prevent recurrence of the symblepharon in the immediate post-operative period, which was left in place for two weeks then removed.
As of two weeks after surgery, the patient was doing well with no evidence of a reformed symblepharon. No tenons nodule was noted at the pterygium excision site and the vision was improved to 20/40 with pinhole. There was an improvement in field of view OD with no remaining diplopia on right gaze.
Literature shows decreased rates of recurrence with the use of a conjunctival autograft compared to the use of mitomycin c. However, with this patient there was not enough conjunctiva to use as an autograft over the bare sclera and, therefore, mitomycin c was used to improve the post-surgical prognosis.

**Conclusion**
A pterygium is a relatively common finding, especially in lower latitudes climates. These are important ocular surface growths to recognize and know when to refer out for surgery. Furthermore, it is important to monitor patients after pterygium excision due to the chance of recurrence. This case illustrates a complication that can occur after a previous pterygium excision, particularly when no graft or anti-metabolite had been used to improve the post-surgical prognosis.
