CASE REPORT

Double Trouble Following Pterygium Excision: A Case Report

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ABSTRACT

Pterygium is a common disease and the gold standard surgical treatment is excision with conjunctival autograft. Pterygium excision has various complications, including recurrence and rarely, conjunctival granuloma. Inflammation is a risk factor for postoperative pterygium recurrence and granuloma formation. Aside from steroids, adjuvants may be used to curb postoperative inflammation but has limited use due to its various side effects. Psoriasis, a systemic inflammatory disease, also affects the eyes. We report a case of a patient with psoriasis who underwent pterygium excision with conjunctival graft which was complicated with both granuloma and recurrence. The granuloma resolved with medical management and the recurrent pterygium was stable at one year after the initial surgery. Patients with inflammatory disorders require careful perioperative planning aimed to reduce postoperative inflammation and subsequent complications, and avoiding the need for a second surgery.
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INTRODUCTION

Pterygium is a common disease which may affect vision and quality of life. The gold standard of treatment is excision with conjunctival autograft , and adjuvants may be used to reduce the risk of recurrence (1). Pterygium excision has various complications, including granuloma, which is rare, and recurrence (2). Increased inflammation, such as in patients with psoriasis, is a risk factor for pterygium recurrence, and possibly granuloma formation (3). We report a case of a patient with psoriasis who underwent pterygium excision with conjunctival graft which was complicated with granuloma and recurrence.

CASE REPORT

A 28-year-old man with psoriasis was under follow-up for bilateral eyes nasal pterygia. He presented with fleshy painless growth at the nasal corner of both eyes. He denied any other symptoms, including symptoms of dry eyes. The nasal pterygia both extended about 3 mm from the limbus, not involving the visual axis. Visual acuity was 6/6 bilaterally. He arbitrarily opted for right eye surgery first and underwent an uneventful right eye nasal pterygium excision with sutured conjunctival autograft harvested from the temporal bulbar conjunctiva. Postoperatively, he was prescribed with intensive steroid and antibiotic eye drops (Maxidex 0.1% and Ciprofloxacin 0.3%), along with intensive lubricants. Despite good compliance, a conjunctival granuloma (CG) at the temporal donor site measuring 6.2 mm x 3.6 mm was noted at 3 weeks postoperative review (Fig. 1). A second topical steroid, Maxitrol 0.1% ointment was added to improve therapeutic efficacy due to the ointment's longer contact time with the eye. He was reviewed every 1 to 2 weeks. During subsequent visits, the granuloma responded to treatment, and shrunk to 4.0 mm x 3.0 mm after 1 week of medical therapy (Fig. 2). His intraocular pressure remained normal throughout the follow up. As the granuloma reduced in size, the steroid eye drop was tapered. After two months of medical treatment, the granuloma fully resolved, but unfortunately with recurrent right eye nasal pterygium measuring 1 mm from the limbus (Fig. 3). At one year after the initial surgery, the recurrent pterygium was stable in size with good corrected vision.

Fig. 1: First appearance of conjunctival granuloma (6.2 mm horizontal x 3.6 mm vertical) at 3 weeks post operation.

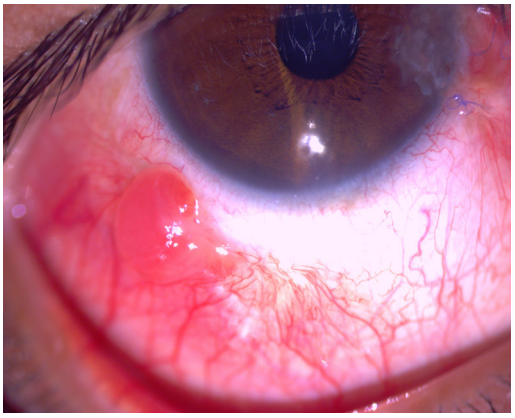

Fig. 2: Granuloma shrinking (4.0 mm horizontal x 3.0 mm vertical) after 1 week of medical therapy

Fig. 3: Recurrent right eye nasal pterygium 1 mm from limbus, stable 1 year after initial surgery

DISCUSSION

The global prevalence of pterygia is about 12% depending on demographic, environmental, and lifestyle factors (3). Surgery can be done for symptomatic, optical, or cosmetic reasons. Options after surgical excision include; primary conjunctiva closure, limbal-conjunctival autograft (LCAG), conjunctival rotational graft, conjunctival flaps, and amniotic membrane graft. Simple excisions leaving bare sclera has a high (38–88%) recurrence rate (1). Excision with conjunctival autograft is the gold standard surgery due to its lower (1.9–8%) recurrence rate (1). CG post pterygium excision is uncommon with an incidence of 1.4%, and a mean onset time of 6 weeks after the surgery (1).

The complications of pterygium excision ranges from mild and self-limiting, to severe and vision threatening. In a retrospective study involving 2356 eyes in 2028 patients who underwent pterygium excision, Kodavoor et al. (2021) recorded several postoperative complications (2). Common complications include subconjunctival hemorrhage, graft edema, and graft retraction. Less common complications were graft loss and sliding of the graft, and rarely, granuloma at either the host site or donor site. Recurrence rate in the study was 1.44% as conjunctival graft was done after excision. Corneal melt occurred in 1 patient (0.04%) who was operated for recurrent pterygium. The study also found that in comparison between primary and recurrent pterygia; subconjunctival hemorrhage, graft edema, graft loss, and recurrence was significantly higher in recurrent pterygia (2). Risk factors for recurrence include young age, fleshy, non-translucent, and/or higher-grade pterygia, and the degree of inflammation (1, 3).

While complications following pterygium excision are well-documented, certain conditions may exacerbate these outcomes. This patient's psoriasis, a chronic inflammatory condition, likely contributed to the heightened postoperative inflammatory response. This connection becomes clearer given that the skin and eyes share an ectodermal origin (4). T helper 17 cells (Th17) plays a pivotal role owing to its pro-inflammatory effects and involvement in an integrated inflammatory loop with dendritic cells and keratinocytes that leads to immune response amplification (5). Psoriasis is also manifested via Koebner phenomenon mediated by keratinocytes, found on skin and conjunctiva, through mechano-induced signalling pathways (5). Upon undergoing pterygium excision, psoriatic patients may develop more substantial postoperative inflammation compared to the normal population, with a higher risk to develop CG and pterygium recurrence. To the best of our knowledge, the association between psoriasis and CG as well as outcomes in pterygia surgery have never been studied. This case may contribute valuable insights.

Given the increased inflammatory response in such patients, careful perioperative measures are paramount. Preoperative steroids could be considered. Careful intraoperative tissue handling is crucial, and better performed by experienced surgeons. For autograft fixation, glues or sutureless techniques such as autologous blood may be preferred over sutures, which is associated with longer operating time and increased inflammation (2). Using amniotic membrane as a graft avoids tissue damage when harvesting the conjunctival autograft. Amniotic membrane graft has been shown to

have no significant difference in pterygium recurrence compared to LCAG (3). Postoperatively, an intensive regime of topical steroids may be beneficial. In this patient, ointment steroid was added to treat the granuloma as it provides prolonged, localized action with less frequent dosing compared to steroid eye drops. Close monitoring of intraocular pressure is essential to prevent steroid induced glaucoma, especially in steroid responders. The importance of lubricants should not be underestimated as dry eye disease (DED), which may occur in patients with inflammatory disorders, perpetuates postoperative ocular surface inflammation (5).

Various adjuvant treatments for primary pterygium are being studied, including anti-metabolites that may reduce the rate of recurrence, with conjunctival autograft with cyclosporine 0.05% eye drops shown to be the most successful (1). However, their adverse effects makes them unsuitable for routine use (1). It is important to identify patients with proinflammatory tendencies so that appropriate countermeasures can be done, and avoid the need to operate on recurrent pterygium, which has been shown to have higher rate of complications compared to primary pterygia.

CONCLUSION

Patients with inflammatory condition may have a higher risk of developing recurrence and CG following pterygium excision. To mitigate these risks, careful perioperative planning is essential: preoperative measures to control the inflammation, precise intraoperative techniques to minimize the tissue trauma, and effective postoperative care. This approach can help lower the chances of CG and recurrence, avoiding the need for a more complicated repeat surgery.

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