

Pyogenic granuloma as rare postoperative complication following pterygium surgery: a case report

Astha Vaghasia¹, Vidhi Kirankumar Modi²

¹Department of Ophthalmology, Dr. D.Y. Patil Medical College and Hospital, Kolhapur, India

²Department of Pathology, Dr. D.Y. Patil Medical College and Hospital, Kolhapur, India

ABSTRACT

The primary complication observed after pterygium surgery is the recurrence of the condition postoperatively. The conjunctival auto-graft technique is used to prevent recurrence. However, with this graft, the process of surgery wound healing may be compromised and may lead to complications like Tenon's granuloma, pyogenic granuloma, or stitch granuloma. This complication must be treated with topical steroid eye drops or surgical excision. Recently, a 32-year-old female patient presented with a painless progressive nodular mass following pterygium surgery on the right eye. This developed after the 15th postoperative day. The clinical assessment indicates a postoperative granuloma, and the patient underwent an excisional biopsy. The subsequent histopathology report confirmed the diagnosis of pyogenic granuloma. The patient was prescribed steroid eye drops in the tapering regimen. No recurrence occurs even after 1 year.

KEY WORDS: pyogenic granuloma; pterygium excision with conjunctival auto graft

Ophthalmol J 2024; Vol. 9, 133–135

INTRODUCTION

A pterygium is defined by the proliferation and invasion of fibrovascular tissue from the bulbar conjunctiva onto the outer layer of cornea tissue [1]. Complications of pterygium include chronic discomfort, changes to the tear film spread, astigmatism, and decreased vision from the involvement of the visual axis when crossing half of the cornea [1]. Pterygium affects both the nasal and temporal sides of the bulbar conjunctiva [2]. The most effective treatment for pterygium is surgery since this will reduce the chances of recurrence. However, a simple excision technique (bare sclera) has more chances of risk of recurrence of up to 80%, so excision with tissue graft technique is considered more effective in reducing chances of recurrence. This

surgery autograft is taken from another part of the conjunctiva with limbal stem cells and placed over the graft bed [3]. However, with this graft, the surgery wound healing process may be compromised and lead to complications like Tenon's granuloma pyogenic granuloma, or stitch granuloma. This complication must be treated with topical steroid eye drops or surgical excision [4].

CASE PRESENTATION

A 32-year-old female came to the hospital for her first follow-up after her right eye pterygium excision with conjunctival autograft surgery. She presented with nodular mass, which was painless and progressive in nature at the nasolimbic side

CORRESPONDING AUTHOR:

Dr. Astha Vaghasia, Junior Resident, Department of Ophthalmology, Dr. D.Y. Patil Medical College and Hospital, Kolhapur, India; e-mail:asthavaghasia@gmail.com

of the operated eye without any visual problem. On local examination, mass showed vascularization, well-defined margins, nontender and pedunculated in nature, measuring 3 x 3 mm in size (Fig. 1).

Ophthalmic examination showed regular anterior and posterior segments. General and systemic examination also were within normal limits. The patient was seronegative for human immunodeficiency virus (HIV). The final diagnosis was granuloma, and excision surgery was advised.

After surgery, tissue was sent for histopathology, which showed a lobular arrangement of capillary-sized vessels separated by fibrous septae lined by squamous cells suggestive of pyogenic granuloma (Fig. 2).

Topical steroid for month advised with tapering manner.

One year follow-up showed no recurrence (Fig. 3).

DISCUSSION

A pterygium is defined by the proliferation and invasion of fibrovascular tissue from the bulbar conjunctiva onto the outer layer of cornea tissue [1]. Complications of pterygium include chronic discomfort, changes to the tear film spread, astigmatism, and decreased vision from the involvement of the visual axis when crossing half of the cornea [1]. Pterygium affects both the nasal and temporal sides of the bulbar conjunctiva [2]. There are two types of pterygium: 1) progressive and 2) atrophied [6]. The progressive type is a thick, fleshy, and vascular mass, and the atrophied type is a thin, flat, pale mass [6].

If the pterygium is atrophic in nature and without any symptoms, the best treatment is lubrication, eye drops, and annual follow-ups.

In the case of progressive pterygium excision with conjunctival autograft, excision with bare sclera, excision with amniotic membrane graft, and excision with mitomycin C are considered treatments.

Pterygium excision with bare sclera leads to 80% recurrence, while other options can prevent a recurrence. However, post-operative pyogenic granuloma occurs after too much handling.

Pyogenic granuloma formation occurs after 1 week of pterygium surgery as a proliferative lesion. It may be due to too much tissue handling or irritation caused by sutures [4]. Small granuloma resolved itself after steroid treatment. But bigger granuloma required surgery.



FIGURE 1. Post pterygium surgery — pyogenic granuloma

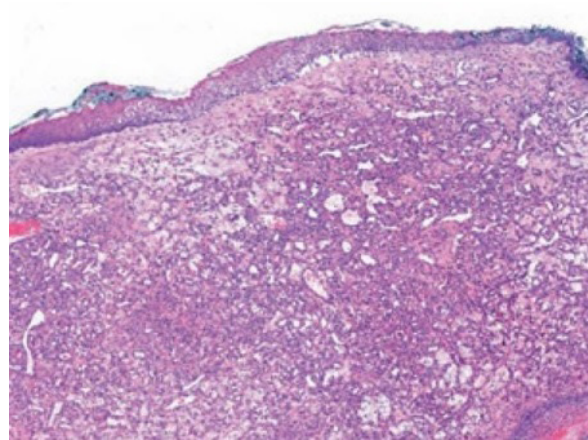


FIGURE 2. Histopathology of pyogenic granuloma showing granulation tissue lined by squamous cells



FIGURE 3. Post-operative eye after 1 year

Histologically, it shows the lobular arrangement of capillary-sized vessels separated by fibrous septae lined by squamous cells suggestive of pyogenic granuloma [6].

In this case, the patient was a young female with progressive pterygium. She underwent excision

with autograft surgery, in which too much handling caused irritation and led to pyogenic granuloma.

Surgical excision and topical steroid in a tapering manner gave good results and no recurrence even after 1-year follow-up.

CONCLUSION

Pyogenic granuloma may occur post-ptyerygium surgery due to too much handling of the tissue. Topical steroids give good results.

Ethical approval

Not applicable to this study.

Consent to participate

Not applicable to this study.

Consent for publication

Consent for publication is obtained from all authors and contributing authors.

Author contributions

All authors certify that they have participated satisfactorily in work to make proper concepts, design, and definition of intellectual content; they helped in literature search, clinical studies, experimental studies, data acquisition, bio-statistician also contributed data analysis, statistical analysis, also medical copywriter's contributed for manuscript preparation, and case study editing, and case study review. A.V. takes responsibility for the integrity of the work from its inception to the publication of the article.

Acknowledgments

A.V. would like to extend their gratitude who have helped them in the completion of this case study. Special thanks to Dr. Vidhi Kirankumar Modi and A.V.'s parents for constantly supporting and encouraging me for this work. A.V. also thanks their colleagues and juniors for their timely help.

Funding

There is no funding for this study.

Conflict of interests

Authors declare that there is no conflict of interest.

Availability of data and material

Not applicable to this study.

REFERENCES

1. Linaburg T, Choi D, Bunya VY, et al. Systematic Review: Effects of Pterygium and Pingueculum on the Ocular Surface and Efficacy of Surgical Excision. *Cornea*. 2021; 40(2): 258–267, doi: [10.1097/ICO.0000000000002575](https://doi.org/10.1097/ICO.0000000000002575), indexed in Pubmed: [33156079](https://pubmed.ncbi.nlm.nih.gov/33156079/).
2. Dolezalová V. Is the occurrence of a temporal pterygium really so rare? *Ophthalmologica*. 1977; 174(2): 88–91, doi: [10.1159/000308583](https://doi.org/10.1159/000308583), indexed in Pubmed: [854262](https://pubmed.ncbi.nlm.nih.gov/854262/).
3. Kuo I, Muthappan V, Wang X. Conjunctival autograft for pterygium. *Cochrane Database of Systematic Reviews*. 2014, doi: [10.1002/14651858.cd011349](https://doi.org/10.1002/14651858.cd011349).
4. Kodavoor SK, Preethi V, Dandapani R. Profile of complications in pterygium surgery - A retrospective analysis. *Indian J Ophthalmol*. 2021; 69(7): 1697–1701, doi: [10.4103/ijo.IJO_3055_20](https://doi.org/10.4103/ijo.IJO_3055_20), indexed in Pubmed: [34146009](https://pubmed.ncbi.nlm.nih.gov/34146009/).
5. Shahraki T, Arabi A, Feizi S. Pterygium: an update on pathophysiology, clinical features, and management. *Ther Adv Ophthalmol*. 2021; 13: 25158414211020152, doi: [10.1177/25158414211020152](https://doi.org/10.1177/25158414211020152), indexed in Pubmed: [34104871](https://pubmed.ncbi.nlm.nih.gov/34104871/).
6. Lee Y, Hyon JY, Jeon HS. Conjunctival Pyogenic Granuloma: Cases with Undetermined Etiologies. *Korean J Ophthalmol*. 2019; 33(5): 483–484, doi: [10.3341/kjo.2019.0017](https://doi.org/10.3341/kjo.2019.0017), indexed in Pubmed: [31612662](https://pubmed.ncbi.nlm.nih.gov/31612662/).