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Case Report

Conjunctival autograft for recurrent conjunctival granuloma

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ABSTRACT

Pyogenic granuloma is a benign vascular tumour that can arise from several reasons and tends not to transform into malignant. These tumours, which are more common in young people, may also recur. Just like in this case, a 39-year-old man came with a mass on his left eyeball that had been enlarged since two weeks ago. He also had a history of surgery on his left eye one month ago. From the examination results, the visual acuity was 5/5 and a 2mm, reddish, firmed border mass on the bulbar conjunctiva at the nasal area. He was diagnosed with conjunctival granuloma and we decided to do tumour excision and also histopathology examination. The histopathology results specified a granuloma. Three weeks later, there was the same mass growth but more prominent. We decided to re-excise with a conjunctival autograft and administered ophthalmic and oral steroids to minimize the recurrence. One month after surgery, the conjunctival graft had already fused with the surrounding conjunctiva without oedema, and five months later, no new granuloma growth was seen. This method can be considered for patient's comfort and cosmetics but still requires further research and a larger number of samples to ensure the accuracy of the data.

Keyword: Recurrent conjunctival granuloma, Pyogenic granuloma, Conjunctival autograft

INTRODUCTION

Pyogenic granuloma, also known as lobular capillary hemangioma, is an acquired benign vascular tumour that can grow on the skin or mucosa. The ophthalmic granuloma can develop on the palpebral or bulbar conjunctiva.[1] The cause of granuloma remains unknown, but it is presumed that several things become the risk factors for its emergence, namely ocular trauma, ophthalmic surgery, pregnancy, inflammation, viral infection, and medication.[2] The definitive management is removing the tumour that can be adjusted to the patient's condition and needs. Topical steroids or non-selective beta-blockers (timolol 0.5%) should be considered as initial treatment. The latest research has proven that timolol 0.5% has a good effect on reducing granuloma. However, if the drugs seem unresponsive, surgery excision should perform.[3]

CASE REPORT

A 39-year-old patient came with a complaint of a bulging mass in his left eye. The initially small mass started to enlarge two weeks ago but is not accompanied by pain; he only feels foreign body sensations with tearing in his left eye. One month ago, his left eye was accidentally got splashed with frying oil and bullae was formed. He had done the surgery for that incident but at another hospital. From the examination, the visual acuity of the left eye was 5/5, a two millimetres-reddish mass lesion with well-demarcated borders on the bulbar conjunctiva at the nasal side, the conjunctiva injection was found near the lesion area, and other anterior segments were normal (Figure 1). He was diagnosed with conjunctival granuloma. The patient was given topical steroid eye drop for two weeks, but he preferred excision biopsy instead of continuing the therapy.

Three weeks later, the patient returned with the same complaint with a larger mass lesion than before. The histopathological from the previous mass lesion analysis revealed the granulation tissue containing fibroblasts, numerous blood vessels and mixed inflammatory cell infiltrate of lymphocytes, neutrophils, histiocytes, and plasma cells; no evidence of malignancy was seen and concluded as a granuloma. The visual acuity from the left eye was 5/5; on the conjunctiva bulbar at the nasal area, there was a five millimetres-reddish-pedunculated mass lesion with conjunctiva injection; other examinations for the anterior segment were unremarkable (Figure 2). We decided to excise the tumour again with a conjunctival autograft (Figure 3). He was also given antibiotic eye drops, low-dose steroids eye drop, artificial tears, and orally methylprednisolone. Patients were asked to routinely control every week for one month (Figure 4) and continue with monthly control for the following months. There was still no growth of new granulomas in the next five months (Figure 5). But unfortunately, due to his work matter, he could not continue control at our clinic. So, we could not observe any further.

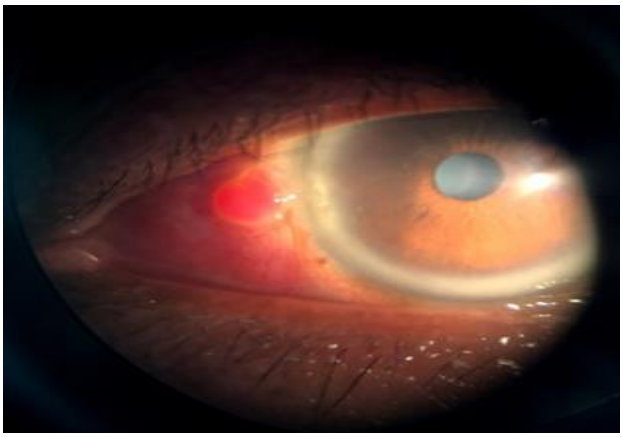

Figure 1: On the first visit. It showed a 2 mm-reddish mass lesion with well-demarcated borders on the bulbar conjunctiva at the nasal side.

Figure 2: Three weeks after the first excision. It showed recurrent conjunctival granuloma in bigger size (5 mm).

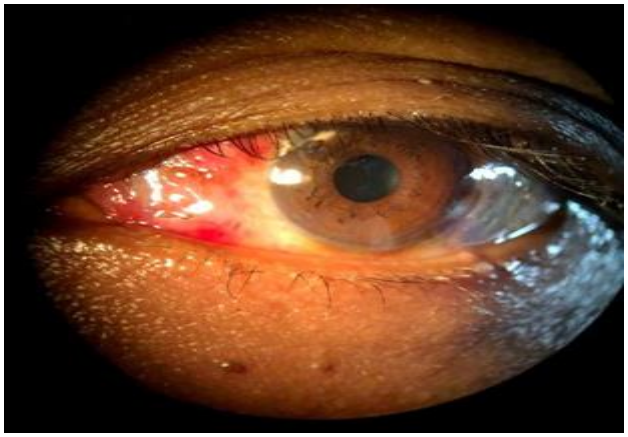

Figure 3: Secondary excision with conjunctival autograft, sutured with vicryl 8-0 (white arrow).

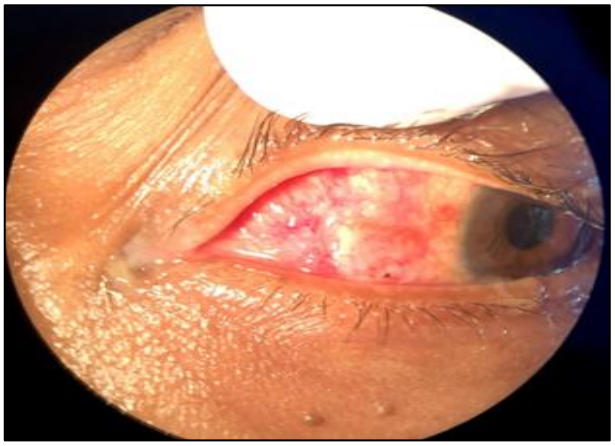

Figure 4: One month after surgery, the conjunctival graft had already fused with the surrounding conjunctiva without oedema.

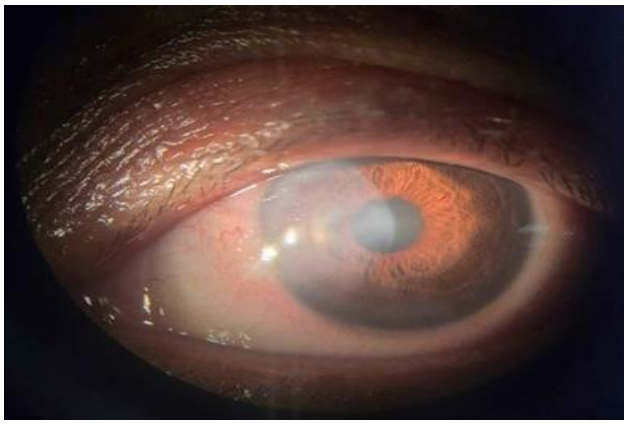

Figure 5: Six months after surgery, no new granuloma growth was seen.

DISCUSSION

Tumours at the conjunctiva generally originate from the epithelial layer and melanocyte cells. Common melanotic

tumours are nevus melanocytes. While the granuloma itself is more widely seen as a non-melanotic tumour, in some cases, it can also be found with melanocyte cells so that its presentation show the darker colour.[4] Some people think that pyogenic granuloma is unsuitable because the lesion is rarely neither pyogenic nor granulomatous. This tumour is a benign tumour that can be sessile or pedunculated, smooth-reddish-rapid growth tumour; It is most frequently found at a traumatic wound site or near a suture line after surgery. The diagnosis for granuloma can be confirmed clinically, but in some instances, with an unusual clinical presentation, it should be confirmed by histopathological examination. Microscopically, the granuloma is contained granulation tissue with chronic inflammatory cells and numerous small-calibre blood vessels.[5,6]

The precise mechanism for the development of granuloma remains unknown. Trauma, viruses, hormonal influences, drugs, cytogenetic abnormalities and the production of angiogenic growth factors have been concerned to play a role. It is assumed that granulomas arise secondary to local tissue hypoxia within the traumatized endothelial cells, resulting in the abnormal expression of growth factors such as vascular endothelial growth factor and basic fibroblast growth factor as pathologic angiogenesis to anomalous healing and the subsequent mass development. The overexpression of STAT3 and P-ATF2 may contribute to pyogenic granuloma and neoplasia.[7,8] Because of angiogenesis imbalance, the granuloma is likely to bleed. The management for granulomas such as pharmacological therapy, steroid eye drop or non-selective beta-blockers (timolol 0.5%) eye drop, can be given for approximately 4-6 weeks. If the granuloma is relatively small is expected to regress completely with a topical eye drop. However, if the granuloma is unresponsive to drugs, surgical excision and biopsy should be performed because they may masquerade several primary or secondary malignant neoplasms.[4,8] The differential diagnosis of granuloma is inflammatory granuloma, squamous papilloma, capillary haemangioma, and malignant tumours, such as amelanotic melanoma, squamous cell carcinoma, angiosarcoma, nodular Kaposi's sarcoma.[9,10]

Other surgical alternatives may be considered when granulomas become recurrent, such as cryotherapy, curettage, electrocautery, and sclerotherapy.[11] In the report by Suman et al in recurrent granuloma cases, they added mitomycin C 0.02% intraoperatively for 1 minute. They did not reveal any recurrence of the granuloma after one year of followed-up.[7] In this case, we used a conjunctival autograft to treat recurrent granulomas based on the pterygium cases, which also have a high recurrence rate. Still, a conjunctival autograft can reduce recurrence significantly with a reasonably high success rate.[12-14] After surgical excision with conjunctival autograft, the patient was given topical steroids four times a day for one month and oral steroids, which were tapered off after five days. The function of the steroid is for lowering the inflammatory reaction and vasoproliferation based on granuloma pathology.[6]

CONCLUSION

Granuloma is a benign tumour with no tendency to be malignant, but proper examination and treatment are still needed to rule out the differential diagnosis. We suggest topical drugs such as steroids or timolol as initial therapy, but surgery should be considered if the tumour persists. In our report, excision with conjunctival autograft can be performed to prevent the recurrence of granuloma. However, this method still requires further research with a larger number of samples and a longer follow-up time.

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