

Conjunctival Pyogenic Granuloma - A Case Report

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Abstract: *Pyogenic granuloma refers to common, acquired, benign vascular tumors in tissues such as the skin and mucous membranes. Predisposing factors such as trauma, presence of infection and a history of pre-existing vascular malformations contribute to the appearance of pyogenic. Since pyogenic granulomas do not resolve on their own, they may bleed, ulcerate, or be cosmetically disfigured. Many therapeutic options are available, including non-surgical and surgical options. Choosing the best treatment based on the patient's characteristics is important to achieve the best results and prevent a recurrence. In this report, we present a case of 45 years old male with pyogenic granuloma on the superior tarsal conjunctiva of his left eye with a predisposing factor of infection history. The treatment the patient received was histopathological excision with local anesthesia and evaluation 2 weeks after the procedure showed no residual lesions or signs of recurrence.*

Keywords: pyogenic granuloma, conjunctival lesion, mucosal lesion, histopathological excision

1. Introduction

Pyogenic granuloma refers to common, acquired, benign vascular tumors in tissues such as the skin and mucous membranes [1]. From the epidemiology study conducted by Harris et al, cutaneous lesion accounted for 86%, with mucosal lesions representing only 12% of cases, The most common cutaneous sites were the trunk, upper extremities, and head. Mucosal lesions were primarily seen on the lips, gingiva, and tongue [2] with several studies mention the tongue as the most common site, followed by the gingiva, nasal mucosa, conjunctiva, cervix, and vagina [2, 3]. The pyogenic granuloma may occur in the various structures of the eye, such as eyelids, conjunctiva and cornea. Several factors are said to be associated with the incidence of pyogenic granuloma, but the exact cause is still unknown [4]. In this report, we present a case of a pyogenic granuloma on the superior tarsal conjunctiva of his left eye and discuss the history of infection as possible pathogenesis.

2. Case Report

Characteristics of the patient

A 45 years old male presents to the eye clinic with a chief complaint of growing mass under the upper eyelid of the left eye. The mass was felt for the first time one year ago and has increased rapidly in size over the past three months. It was irritating the eye and made him uncomfortable. Due to its size, the mass started to interfere with the patient's vision. She also has been experiencing excessive tearing of the left eye. He admitted having a history of a sty in his left eye before this and was improved with eye drops. Previous therapy for the mass, such as warm compresses and xytrol eyedrop, has not relieved any of his symptoms.

Ophthalmic examination

Visual acuity in both eyes was 6/6. On examining the anterior segment, we found that the lids, cornea, sclera were normal, with minimal conjunctival vascular injection on the left bulbar conjunctiva. Iris had normal color and pattern.

The pupil's size was normal and reacting to light. No changes in the lens were seen. When the left upper eyelid was everted, flat, red, with vascular around the lesion, fleshy pedunculated mass was seen arising from the tarsal conjunctiva. Larger feeder vessels were seen at the base of the mass. A clinical diagnosis of a pyogenic granuloma was made, and he underwent excision biopsy under 0.5 cc local infiltration of 2% lidocaine.



Figure 1: Preoperative Image of 45 Years Old Man with Conjunctival Pyogenic Granuloma on the Superior Tarsal Conjunctiva Of His Left Eye

Pathological Examination

The mass was structured by lobules of small and large thin-walled vessels. The lumen contains erythrocytes and lymphoplasmic chronic inflammatory cells. These findings were suggestive of pyogenic granuloma.

Evaluation

2 weeks after excision the patient came for a re-evaluation examination, there were no complaints with good left eye examination results and no signs of recurrence.



Figure 2: 2 weeks after excision there is no signs of recurrence

3. Discussion

Pyogenic granuloma is a rapidly growing benign vascular tumor also known as lobulated capillary hemangioma. It can appear after a minor injury, after infection, or develop spontaneously, like in this case. It is more common on the skin than on mucous. Approximately 60% of Pyogenic Granuloma cases occur between the ages of 10 and 40, and they are more common in females [5, 6]. Pyogenic granuloma in conjunctiva can occur in any age group, but based on some epidemiology data, it is more common in children, adolescents, and pregnant women [7, 8]. In this case, the patient was male and 45 years old, which is slightly different from the epidemiological data of patients who are more common with pyogenic granuloma.

Studies investigating specific angiogenic actors and signal transduction pathways have not provided a clear picture of the lesion pathogenesis. The most likely mechanism is an imbalance between proangiogenic and antiangiogenic factors resulting in the excessive proliferation of capillaries with neovascular, brittle, and lobulated features. Predisposing factors such as trauma that causes reactivation of granulation tissue to contribute to the appearance of pyogenic granuloma lesions, but the presence of trauma is only supported by 7% of the total cases [1]. Other predisposing factors are the presence of infection and a history of pre-existing vascular malformations [4]. In this patient, there was a history of stye infection in his left eye before growing into a pyogenic granuloma lesion. This mechanism supports other studies showing infection as a predisposing factor in the pathogenesis of pyogenic granulomas

The general appearance of pyogenic granuloma are soft, dome-shaped papule/nodule or a sessile or pedunculated papule/nodule with a smooth, glistening, erosive, or friable

surface [4, 9]. The color is usually bright red to dusky red initially. Over time, vascularity decreases, and the lesions tend to become more collagenized and pink in color [4, 10]. The appearance of the lesion in this patient was mainly a red fleshy pedunculated mass that was seen arising from the tarsal conjunctiva supported by larger feeder vessels were seen at the base of the mass. These findings were suggestive of pyogenic granuloma.

Histologically, pyogenic granuloma is a mass consists of highly vascularized granulation tissue with chronic inflammatory cells [11]. The histopathology examination of this patient shows thin-walled vessels with lymphoplasmic chronic inflammatory cells support histologic evidence in the diagnosis of pyogenic granuloma.

Another differential diagnosis of Pyogenic Granuloma is oculosporeidiosis, a rare infection caused by *Rhinosporidium Seeberi* [12], commonly affects mucus membranes such as the nasal mucosa, pharynx, and the conjunctiva, typical conjunctival lesion in oculosporeidiosis is a red, fleshy, pedunculated, polypoid mass arising from the palpebral conjunctiva with multiple pale yellow dots representing the mature sporangia on the surface [13].

Since pyogenic granulomas do not resolve on their own, they may bleed, ulcerate, or be cosmetically disfiguring [14]. Many therapeutic options are available, including non-surgical and surgical options. It is important to discuss about treatment, risk and possibility of recurrence with the patient [1]. In an area that is not visible, complete excision is the preferred method to remove the lesion due to the recurrence rate is lower than others and the excellent specimens for histopathological characterization. Excision is done under local anesthesia. For sessile lesions or recurrent lesions, surgical excision with suture preferably and overall produce less postoperative bleeding with a lower recurrence rate [15]. This patient underwent histopathological excision with local anesthesia. Evaluation two weeks after the procedure showed no residual lesions or signs of recurrence.

4. Conclusion

Pyogenic granuloma is a common, acquired, benign vascular tumor on the skin or mucous membranes. Several predisposing factors are said to have a role in its pathogenesis, such as a history of infection. Further research is needed to provide a definitive explanation of the lesion pathogenesis to be used as a base in preventing the occurrence of lesions. Many types of therapy are available for this case. Choosing the best therapy based on the patient's characteristics is important to achieve the best results and prevent a recurrence.

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