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UNCOMMON PYOGENIC GRANULOMA ON THE LOWER LIP OF AN ORTHODONTIC PATIENT – A CASE REPORT

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ABSTRACT

Pyogenic granuloma is localized granulation tissue overgrowth or mucosal vascular hyperplasia. Clinically, pyogenic granuloma presents as localized granulation tissue overgrowth or mucosal vascular hyperplasia. These lesions can be found intraorally with incidence higher in females than males. Histologically, these lesions show a soft tissue fragment presenting hyperplastic stratified squamous epithelium with patchy ulcerated areas covered with pyogenic membrane and covering highly vascular granulation tissue containing aggregations of acute and chronic inflammatory cells. The most common treatment is surgical excision with eradication of local irritants. This case report describes a pyogenic granuloma on the lower lip in a 22-year-old male, discussing the clinical features and histopathologic features that distinguish this lesion from other similar oral mucosa lesions.
BACKGROUND

Benign oral soft tissue masses encompass a wide variety of mass lesions. Characteristically they all share the property of being exuberant with minimal growth into deeper tissues. These lesions can be either neoplasm or non-neoplasms (1). Pyogenic granuloma (PG) is localized granulation tissue overgrowth or mucosal vascular hyperplasia (2). Usually, PG is a reaction lesion may be caused by different factors such as local irritation, traumatic irritation (3, 4), hormonal changes, viral and bacterial infections (5).

PG can be found on the face, trunk and limbs (6). It also can be found intraorally with incidence higher in females than males by 1.5:1 ratio (6, 7). Most frequently on the anterior part of the gingiva (8) a striking predilection but extra- gingival areas such as the tongue, oral mucosa and lips can be affected with varying clinical features that sometimes may mimic more serious lesions such as malignancies (7, 9). It occurs most commonly between the age group 20 and 30 years old (6, 7). The clinical diagnosis of such an uncommon extragingival pyogenic granuloma can be quite challenging (9-12).

Varying clinical features of such lesion sometimes may mimic more other lesions such as mucoceles. Since, mucoceles are the most common benign lesions related to the minor salivary glands and their respective ducts frequently affecting oral structures which are generally asymptomatic (13,14). Mucoceles are generally characterized by swollen nodular lesions preferentially located on the lower lip. It is commonly occurs as extravasation or as a retention type. It is believed to be as a result of mechanical trauma to the excretory duct of the salivary glands, causing duct transection or rupture, with consequent extravasation of mucin to the connective tissue stroma (mucus extravasation phenomenon, MEP) (15-17). In addition, mucus might be retained in the duct and/or acinus as a result of duct obstruction (mucus retention phenomenon, MRP) (18). To reach a final diagnosis is not easy but it is possible through histopathological examination as many lesions are very close to each other clinically as well as in the aetiology (6, 7). Various techniques are available for the treatment such as laser surgery, surgical excision, curettage, cryotherapy with liquid nitrogen, laser vaporization with carbon dioxide, or a combination of methods (6, 7).

The purpose of this paper was to report a case of 22 years old male who presented with a pyogenic granuloma in his lower lip after local irritation due to the orthodontic brackets of the lower anterior teeth.

CASE REPORT

22 years old male was referred from the Division of Orthodontic specialty Clinics to the Division of Oral Surgery specialty clinics at King Khalid University College of Dentistry, Abha, Saudi Arabia, presenting with a superficial hyperplastic lesion on the lower lip. The main complaint was related to general discomfort particularly during eating. The patient is currently an orthodontic patient since two years. The lesion has been noticed since 8

Figure 1: Pre-Operative View
months, and it is as a result of frequent lip biting and irritation by orthodontic brackets. The lesion increased in size and became more opaque over time. Upon examination, the lesion appeared opaque with irregular margins. Furthermore, it was pediculated and ulcerated which was similar to a reactional lesion with a possible diagnosis of Pyogenic Granuloma (Figure 1).

Surgical excision of the lesion was done under local anaesthesia (Figure 2, 3, 4) and the specimen was taken for histopathological examination. Histopathological examination revealed a soft tissue fragment presenting hyperplastic stratified squamous epithelium with patchy ulcerated areas covered with pyogenic membrane and covering a highly vascular granulation tissue containing aggregations of acute and chronic inflammatory cells. These characteristics confirmed the diagnosis of PG (Figure 5, 6).

**DISCUSSION**
Pyogenic granuloma is a misnomer as the lesion is not associated with pus formation and histologically the lesion is composed of granulation tissue. Clinically, the lesion showed necrotic white material which resembled pus, thus impelled clinicians to refer to these lesions as pyogenic granuloma. Several authors preferred to term this entity as lobular capillary hemangioma based on the histological appearance (19, 20).

This case report presented PG on the lower lip for a 22 years old male patient. The literature reported the anterior region of the gingiva as the most common location of PG with higher prevalence among 20 and 30 years old (6, 7). One of the etiological factors for PG is local irritation, characterizing the lesion as reactional (3, 4). In this case the lesion appeared as a result of local irritation due to orthodontic brackets of the lower anterior teeth.

The clinical and the histopathological examination confirmed the diagnosis of PG which matched the finding of many authors (3, 4, 6, 7). Nevertheless, PG has several differential diagnosis such as angiosarcoma, basal cell carcinoma, squamous cell carcinoma and peripheral giant cell granuloma which were only excluded after the histopathological examination. Many treatment options are available to treat PG but in this case surgical excision was used to provide immediate solution and addressing the patient chief complaint.

CONCLUSION

Although pyogenic granuloma can be diagnosed clinically, atypical presentations lead to inappropriate diagnosis and should be further investigated by biopsy to rule any other serious lesions. The tissue origins of benign oral soft tissue masses were traumatic. It is mandatory for any case to have a detailed medical and dental history followed by a good clinical examination. Then, confirmed by Histopathological examination to exclude all other lesions.

REFERENCES


