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Abstract

Pyogenic granuloma (PG) is an inflammatory hyperplasia that arises in response to various stimuli such as low-grade local irritation, traumatic injury, or hormonal factors. It may occur at any age, with the highest incidence in the 2nd and 5th decades of life. Women are more frequently affected due to the increased levels of circulating hormones, oestrogen and progesterone. The most common site for oral PG is the gingiva. In this report, a case of PG of the gingiva with severe bone loss is presented.

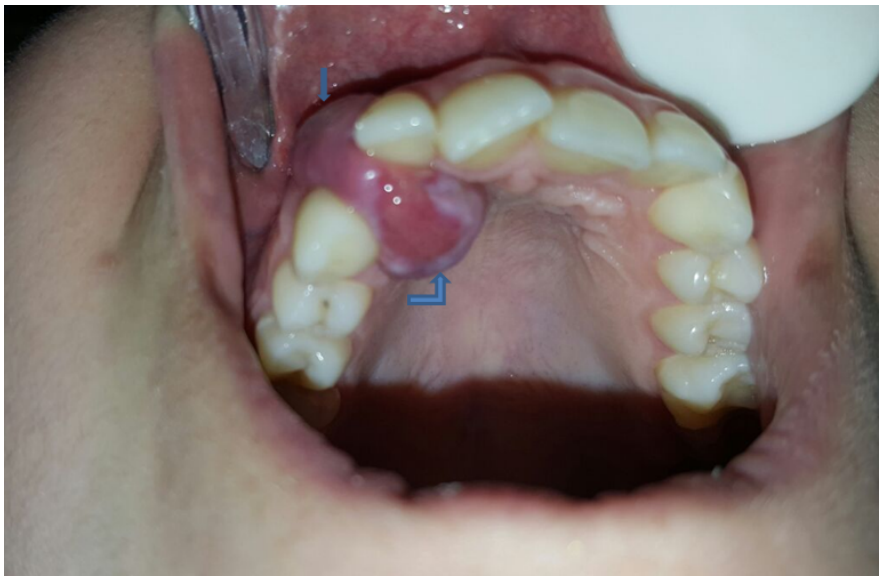

Figure 1: An intraoral photograph showing the pyogenic granuloma

Pyogenic Granuloma of the Gingiva: A Case with Severe Bone Loss

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Pyogenic granuloma (PG) is an inflammatory hyperplasia that arises in response to various stimuli such as low-grade local irritation, traumatic injury, or hormonal factors. It may occur at any age, with the highest incidence in the 2nd and 5th decades of life. Women are more frequently affected due to the increased levels of circulating hormones, oestrogen and progesterone. The most common site for oral PG is the gingiva. In this report, a case of PG of the gingiva with severe bone loss is presented.

Keywords: inflammatory hyperplasia, oral cavity, pyogenic granuloma, gingiva

Introduction

Pyogenic granuloma (PG) is an inflammatory hyperplasia that habitually appears as a response to irritants, trauma, hormonal changes, or certain medications [1]. Oral PG belongs to a group of nodular growths located in the mucosa with histologic features including inflamed fibrous and granulomatous tissue. This group also includes epulis fissuratum, palatal papillary hyperplasia, and pregnancy tumors [2]. Oral PG is usually smaller than 2 cm and rarely causes minimal bone loss. In 75% of the cases, it is located in the gingiva. In this report, we present a PG of the gingiva with extensive bone loss.

Case presentation

A 26-year-old female patient was referred to our specialized clinic for evaluation of a persistent swelling in the upper anterior right maxillary region. She reported having noticed the swelling 5 years ago, and her dentist had twice removed it surgically, but it recurred. The last surgery was done 2 years ago, but the lesion has also recurred and gradually increased to attain the present size. Her medical history was unremarkable, and she was not on any medication. Her physical examination disclosed no extra-oral abnormalities.

Intraoral examination revealed a pedunculated exophytic gingival overgrowth extending bucco-palatally between the teeth #12 and #13 (Figures 1 and 2).

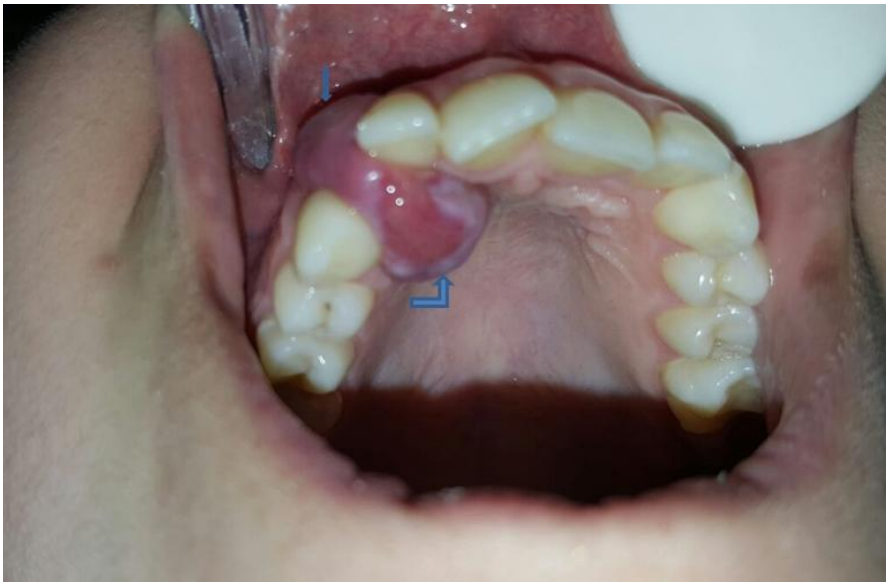

Figure 1: Intraoral photograph showing the lesion

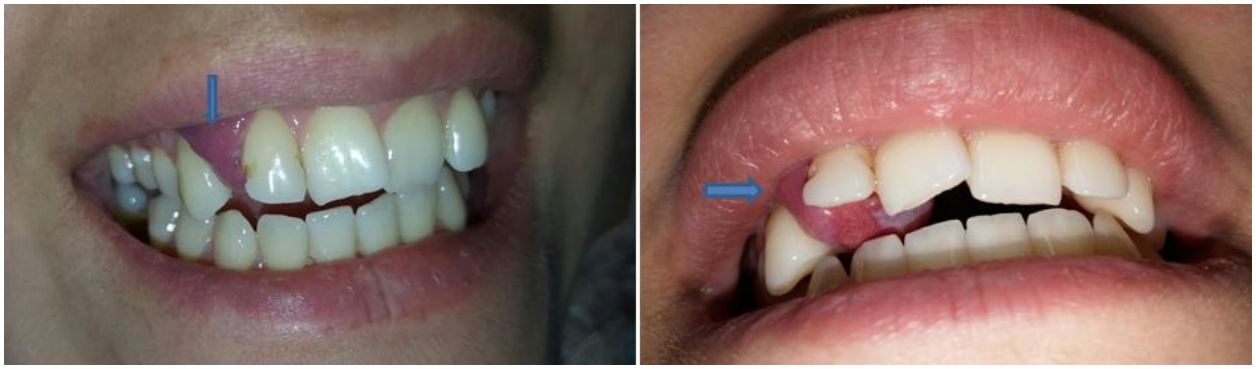

Figure 2: Extraoral photographs showing the lesion

The growth was reddish, soft in consistency, and bled easily. The overlying mucosa was smooth and shiny. The patient's oral hygiene was satisfactory.

Panoramic radiograph showed extensive bone resorption between the teeth #12 and #13 (Figure 3).

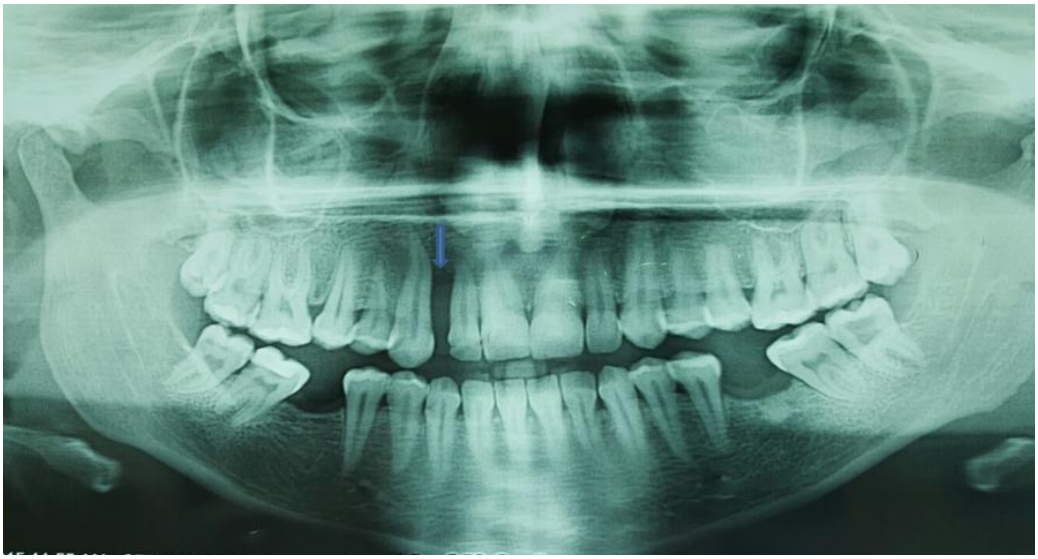

Figure 3: Panoramic radiograph showing the bone resorption between the teeth #12 and #13

The growth was completely excised under local anesthesia and sent for histological examination. Histopathological results of the specimen showed a well-defined lesion made up of vascular sections bordered by a regular endothelium. The connective tissue was infiltrated by

polymorphic leukocytes. The squamous epithelium was invaginated at the edge of the lesion and was ulcerated on the surface. Parakeratosis was noted. There was no evidence of tumor cells. All these features were suggestive of PG.

The patient was scheduled for a follow-up after 6 months.

Discussion

Oral PG, also known as granuloma pediculatum benignum, eruptive hemangioma, granulation tissue-type hemangioma, granuloma gravidarum, benign vascular tumour, and pregnancy tumor, is a non-neoplastic inflammatory hyperplasia that was once thought to be a fungal infection (Botryomycosis), but it is now thought to be a reactive inflammatory process associated with exuberant fibro vascular proliferation of the connective tissue [1-4]. Various factors are suggested to be implicated in the etiopathogenesis of PG, such as chronic low-grade local irritation from overhanging restorations or calculus, trauma, hormonal changes, certain drugs, bone marrow transplants, and reactions to grafts [4]. However, its exact etiology remains unknown [3, 4].

Oral PG can occur at any age, with the highest incidence in the 2^{nd} and 5^{th} decades of life [4]. Women are more frequently affected due to the increased levels of circulating hormones, oestrogen and progesterone [5].

PG may present as a sessile or pedunculated lesion. Typically, in the oral cavity, it is located in the interdental gingiva (75%) of the maxillary anterior region, but it may also affect the lips and tongue [6]. It is usually painless, with a size ranging from a few mm to a few cm. It rarely exceeds 2 to 2.5 cm. The surface may be ulcerated and shows a bleeding tendency either spontaneously or after slight trauma [3].

Oral PG usually presents as an exophytic lesion without bony involvement. However, in the literature, many cases of bone resorption have been reported [7-10]. In our case, the clinical aspects presented by the patient fit into the classic presentation of PG but with alveolar bone resorption.

Peripheral giant cell granuloma, peripheral ossifying fibroma, oral granular cell tumor, and metastatic cancer are all differential diagnoses for PG [1, 3].

Treatment of PG is by conservative surgical excision with the removal of possible traumatic factors. During surgery, vigilant monitoring is important because of the vascular nature of the lesion, which leads to abundant bleeding [3]. Recurrence after excision has been reported to occur in up to 16%, with gingival PG presenting a much higher recurrence rate [4, 11]. Other surgical techniques that have been used for the treatment of PG include cryosurgery in the form of either liquid nitrogen spray or a cryoprobe, and laser surgery using Nd: YAG (neodynium: yttrium-aluminum-garnet), CO, and flash lamp pulsed dye lasers [12].

Conclusion

PG is a non-neoplastic lesion with an unknown etiology. In the oral cavity, its diagnosis is challenging and recurrence after surgical treatment is highly reported. Hence, their early and accurate diagnosis and management and regular postoperative follow-ups are mandatory for optimal treatment outcome and recurrence prevention.

Conflict of interest statement

The author declares that there is no conflict of interest.

Ethical statement

The patient gave her approval and consent to report her images and other clinical information relating to her case in a medical publication.

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