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Meryem Lamrani Alaoui
Resident Pediatric dentistry
department Center of
consultation and dental
treatment of Rabat. Mohammed
V University in Rabat. Morocco

Sarah Tabbai
Resident Pediatric dentistry
department Center of
consultation and dental
treatment of Rabat. Mohammed
V University in Rabat. Morocco

Fatima Zahra Benkarroum
Professor assistant Center of
consultation and dental
treatment of Rabat. Mohammed
V University in Rabat. Morocco

Hakima Chhouh
Professor and chief Pediatric
dentistry department
Center of consultation and dental
treatment of Rabat. Mohammed
V University in Rabat. Morocco

Correspondence

Meryem Lamrani Alaoui
Resident Pediatric dentistry
department Center of
consultation and dental
treatment of Rabat. Mohammed
V University in Rabat. Morocco

Management of a pyogenic granuloma of the tongue: A case report and review of the literature

Meryem Lamrani Alaoui, Sarah Tabbai, Fatima Zahra Benkarroum and Hakima Chhouh

Abstract

Pyogenic granuloma is a benign non-neoplastic mucocutaneous lesion evolving in response to local irritation. In the mouth, the lesion most commonly affects gingiva. This paper is about a pyogenic granuloma of the tongue. Clinical features, pathogenesis, differential diagnosis, histopathology, and treatment are discussed.

Keywords: pyogenic granuloma, botryomycoma, tongue

Introduction

Pyogenic granuloma or Botryomycome is a benign epithelial tumor of skin and mucous membranes. It occurs as a result of chronic irritation, trauma or hormonal alteration during pregnancy [1]. In the oral cavity, this lesion often affects gingiva (75%), more rarely the lingual, labial, palatal or jugular mucosa.

This paper is about a rare location of pyogenic pyogenic granuloma in the dorsal side of the tongue. Clinical signs, etiology, differential diagnosis, histological aspect, and treatment are discussed.

Case report

A 10-year-old boy with no previous medical history was referred to the pediatric dentistry department, for a painless mass in his tongue associated with dysphagia.

The patient reported a history of hemorrhage at this lingual mass following a bite with checked hemostasis after 15 min. The lesion has increased volume over a period of 2 months before becoming stable.

Palpation didn't revealed any associated cervical lymph adenopathy.

Endobuccal examination revealed moderate hygiene and budding tumor (Fig.1) measuring 9 × 6 × 5 mm (9 mm long, 6 mm wide and 5 mm thick), red, soft, painless, with a stalk, located in the dorsal side of tongue, at the tip and a fibrine covered surface.

The lesion's architecture evoked a pyogenic granuloma (Fig.2).

Tumor excision was performed under local anesthesia with 1 mm margins from the base of the lesion, (Fig.3). Thus the lesion was easily dissected from the muscular layer underlying (Fig.4, 5). The wound was then sutured with an X point (Fig.7).

The excised tissue has been stored in formalin at 10% for anatomico-pathological examination which showed a hyperplastic fleshy bud covered on the surface by a fibrino- necrotic-leukocytecoating. It is based on a granulation tissue with many congestive vessels associated with polymorphic leucocytes (Fig.6, 8).

A check was made 15 days after the resection and no recurrence was observed after 6 month (Fig.9, 10).

Discussion

The pyogenic granuloma has been described for the first time by Poncet and Dor [2], as a non-neoplastic inflammatory hyperplasia frequently appearing in response to chronic irritation. The term pyogenic granuloma was considered improper because this tumor is not associated with pus and doesn't resemble histologically to granuloma [3].

It is therefore called: Botriomycoma. "P.G" can be found anywhere in the oral cavity, including the lining of the lips, cheeks, palate and tongue [4]. Our patient's tumor was located at the dorsal side of tongue. This localization has caused a gene for the patient, during swallowing. It has been reported that this tumor is rarely located at the buccal floor because of lingual protection of this region against trauma and absence of a sufficient amount of connective tissue in the floor mucosa.

Pyogenic granuloma concern all ages, from 18 months to 93 years [5], but it is more common in children, adolescents and pregnant women at the first trimester [6]. Female sex is lightly more affected than male with a ratio of 2/1. In the pediatric population, average of occurrence of pyogenic granuloma is 6.7 years; with 42% of consulting cases at 5 years. While in adults, the incidence reaches a maximum level in the third decade [4].

The pathogenesis of the pyogenic granuloma remains unexplained. Commonly trauma is often considered as the initiating factor. Approximately 25% of pyogenic granuloma's especially the gingival are occur after trauma [7]. In many patients, poor oral hygiene may also be a factor of evolution of "P.G". Otherwise, Aguilo. L reported a formation of "P.G" around fractured crown of a temporary maxillary incisor [8].

In addition, female hormones increase the production of angiogenic factors, such as the basic fibroblast growth factor (bFGF) and the vascular endothelial growth factor (VEGF: vascular endothelial growth factor) which lead to the appearance of pyogenic granuloma [9]. A drug cause must also be sought, especially when the lesions are eruptive and multiple. Indeed, ciclosporin is known as responsible for the development of pyogenic granulomas. Infections caused by herpes type I and Epstein-Barr virus have been also incriminated [10]. Kanda. Y *et al* [11] reported a case of pyogenic granuloma of the tongue occurring after an allogenic bone marrow transplant. In our case, given the location of lesion, a bite could stimulate the hyperplastic response.

The pyogenic granuloma is then an exaggerated response by excessive granulomatous tissue formation after chronic local irritation, minimal trauma, or modification in sexual hormones (androgene). It is unrelated to an infectious and considered to be an exuberant mode of healing.

Epivatianos. A *et al* [13] described two types of "P.G" with different clinical and histological aspects: lobular capillary haemangioma "LCH" which is often a sessile lesion and non-LCH with a stalk. Our patient presented the second type.

Pyogenic granuloma is painless, soft, with shiny and friable surface, and are initially red. It is usually haemorrhagic, the slightest touch may causes bleeding that is difficult to control. However, in our clinical case, it was collagenous, pink, covered with fibrin. chronocity is related to vascularity decrease. Clinically, pyogenic granuloma is indistinguishable from giant cell peripheral proliferation. Giant cell granuloma, peripheral bone fibroma, tumor Kaposi's sarcoma, squamous cell carcinoma, angio sarcoma and infantile hemangioma can be considered as differential diagnosis [14]. Squamous cell carcinoma, fibro sarcoma, leukemia and lymphoma non-Hodgkin's must also be included. However, great importance must be given to the clinical resemblance of "P.G" with a primary or metastatic malignancy [4, 15].

For our young patient, it was necessary to differentiate "P.G" from oral papilloma which has a viral origin [16]. In the absence of spontaneous regression of the pyogenic granuloma, surgical excision with 2 mm margins from the base of the lesion and under local anesthesia remains the treatment of choice. Any foreign body or defective restoration must be

removed during excision.

However, the excision of the lesion in our patient was performed with only 1 mm margins, given the reduced extent of its clinical implantation. Conventional surgery can be replaced by other therapeutic modalities, actually: Nd / YAG laser excision, nitrogen cryo surgery, intra-lesional injection of corticosteroids or sclerosing agents [17] and the CO2 laser in pulsed or continuous mode [18]. However, the destructive aspect of all these techniques does not allow confirmation of diagnosis evoked by histological examination. As for the cost-effectiveness ratio, the ablation-electrocoagulation is placed first [12]. Histology of pyogenic granuloma, consists of an exuberant granulation tissue, sometimes lobulated. Some authors assimilate pyogenic granuloma to lobulated angiomas. Others classify it rather as reactive vascular hyperplasia with an inflammatory component. Both etiology of the lesion and the histological aspect argues for this second hypothesis [19].

Indeed, it is a connective bud whose surface is partly epithelial and partly covered with a fibrin-leucocyte exudate. There is also an infiltrate of inflammatory cells including neutrophils, lymphocytes and plasma cells. Older lesions may have areas with fibrosis.

According to Taira. JW *et al* [20], recurrences are rare after extra-gingival pyogenic granuloma removal with a rate of 16%. In contrast, incomplete excision, failure elimination of etiological factors [21], recurrent trauma [14] or excessive production of angiogenic factors play a significant role in its recurrence.



Fig 1: Superior view of pyogenic granuloma.on the midline of the dorsum of the tongue.



Fig 2: Inferior view of pyogenic granuloma. on the midline of the dorsum of the tongue.



Fig 3: Excision with 1mm at the clinical periphery of the lesion.



Fig 4: Site after excision of the lesion.



Fig 5: Excised tissue.



Fig 6: Preservation of tissue excised in Formalin dosed at 10%.



Fig 7: Wound closure with primary sutures.

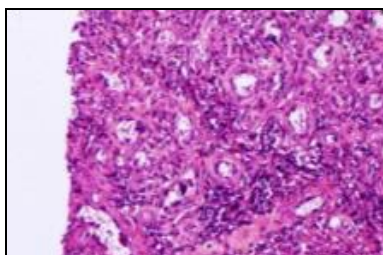


Fig 8: Microscopic examination (magnification 100) showing a filler fibrino-nécrotico leucocytair. This one bases on a tissue of granulation containing numerous congestive vessels associated to polymorphic leukocytes.



Fig 9: 15 days check.



Fig 10: 6 th months follow-up.

Conclusion

Although the pyogenic granuloma is a non-neoplastic vascular hyperplasia of oral cavity, the appropriate diagnosis and treatment of the lesion are very important.

'P.G' usually follows a local trauma and therefore its elimination remains the major line of treatment before proceeding with surgical excision.

New therapeutic approaches are reported such as cryosurgery, Nd: YAG laser excision, etc. Despite of these alternative therapies, recurrence is not uncommon in some cases and re-excision is necessary.

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