Giant Cell Fibroma of the Maxillary Gingiva in Children: A Case Report

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ABSTRACT

The purpose of this paper is to describe a giant cell fibroma in the maxillary gingiva of an 11-year-old girl. After excisional biopsy, histological examination showed the presence of numerous giant, multinucleated, stellate-shaped cells dispersed throughout the fibrous tissue of the lamina propria. No recurrence was observed after the 1-year follow-up. Since this lesion is clinically similar to other non-neoplastic lesions and very uncommon in children, establishing a correct diagnosis can be difficult and achieved only based on specific histological characteristics. Thus, it is important that pediatric dentists have knowledge about this uncommon lesion.

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Giant cell fibroma (**GCF**) is a non-neoplastic lesion of the oral mucosa, first described by Weathers in 1974,[1] which represents 5% to 10% of all fibrous lesions.[1-3] The prevalence of GCF is high in Caucasians at the second and third decades of life[1,3-5] or at the third and fourth decades of life.[2] Although some authors point out that there is no gender preference,[5,6] this lesion presents a slight predilection for females, especially after puberty.[1,2,4,6]

Clinically, GCF is observed as a red or purple asymptomatic and papillary nodule, pedunculated, or sessile.[2,4,6] The size may vary from a small papule to a massive enlargement, but most lesions range from 1 to 2 cm in diameter.[6] Moreover, these lesions are slowly growing and tend to reach a maximum size and then remain static. Usually, GCF affects the mandibular gingiva at a ratio of 2:1 compared to the maxilla, followed by tongue and buccal mucosa.[4,5] For this reason it should certainly be included in the differential diagnosis involving all gingival fibrous lesions, especially those found in the mandible.

Histologically, GCF is characterized by the presence of mono and multinucleated giant cells, hyperparakeratinized squamous stratified epithelium, immature connective tissue with oversized and large stellate fibroblasts, and absence of granulation tissue.[1,2,5,7] Although the etiological mechanisms involved with GCF remains unclear, its etiology is often related to local irritating factors, response to trauma, or a chronic inflammation.[3,6]

The purpose of this report was to illustrate a case of GCF in a child, discussing the histological and clinical data, and providing important information for a differential diagnosis.

CASE DESCRIPTION

The case reported here is in accordance with ethical principles accepted by the World Medical Association Declaration of Helsinki and was approved by the Ethical Committee Board of the University of São Paulo. An

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11-year-old Caucasian girl attended the Oral Diagnosis Service of the University of São Paulo with the complaint of an asymptomatic gingival swelling. The lesion was represented by a single nodule located in the maxillary palatal gingiva between the permanent maxillary right and left central incisors.

Clinically, the lesion measured 15-mm in diameter and presented with a fibrous and pedunculated aspect, color similar to the normal mucosa, and well-delineated edges (Figure 1). Medical and family history did not contribute to the diagnosis, and the radiographs did not show any aspect of hard tissue lesion. Clinical diagnosis comprised pyogenic granuloma and peripheral giant cell granuloma.

Under local anesthesia, the lesion was excised and curettage also was performed. After its complete removal, the excised tissue was sent for a histopathological examination. This revealed a fragment of mucosa covered by a hyperparakeratinized squamous stratified epithelium, with long and thin projections directed to the lamina propria (Figure 2). This consisted of fibrous connective tissue, which presented many short collagen fibers. Under the epithelium, among the interpapillary crests, many giant, multinucleated, stellate-shaped cells were found, leading to the diagnosis of giant cell fibroma (Figure 3).

Simple surgical removal is the treatment of choice for GCF. Thus, complete removal of the lesion helped solve the case. After 1 year, the patient presented a healthy mucosa, without any sign of recurrence.

DISCUSSION

The importance of identifying non-neoplastic lesions is related to the high incidence of these disorders. Moreover, since they have similar clinical characteristics, their diagnosis is often challenging. Particularly in children, the gingival lesions that could represent a differential diagnosis of GCF include pyogenic granuloma, peripheral ossifying fibroma, hemangiomas, epulis, and irritative fibroma.[6,8,9]

In the present case report, it is important to emphasize the clinical similarity with pyogenic granuloma and peripheral giant cell granuloma. It must be considered, however, that the pyogenic granuloma generally appears as a reddish or pinkish nodule, which easily bleeds when touched.[7] It differs from the peripheral giant cell granuloma, since the latter is exclusively located in the gingival mucosa, mesially to the first molars.[10-12] These characteristics are similar to those presented by the GCF, which, due to its unspecific clinical aspects, is often misdiagnosed as irritation fibroma, neurofibroma, papilloma, and pyogenic granuloma.

GCF is uncommon in children, being prevalent in teenagers and young adults between the second and fourth decades of life. The present case shows a GCF in an 11-year-old patient, which makes this case particularly interesting and unusual. Moreover, it provides important features and information to pediatric and general dentists to provide support in the diagnosis process. Another particularity of this case is the location of the lesion in the anterior maxilla, which is different than reported in the literature, namely the mandible, in a 2:1 ratio.[1,2]

Histologically, GCF is characterized by many large stellate cells and multinucleated giant cells located just below the epithelium. The giant multinucleated cells present wide and hyperchromatic nuclei and a demarcated cytoplasm, similar to Langhans giant cells.[5,13] Differently from the clinical features, the histological aspects are specific, which excludes the other non-neoplastic lesions and determines the exact diagnostic of GCF.

The origin of giant multinucleated cells is a matter of discussion, and many immunohistochemical studies have revealed reactivity for vimentin, suggesting a fibroblastic phenotype.[5,14,15] Ultrastructural analysis suggested that these cells are unusual fibroblasts.[13] Recently, Souza et al[15] found that mononucleated, binucleated, and multinucleated cells from fibrous hyperplasia, giant cell fibroma, and fibroepithelial polyp originated from fibroblasts lineages.

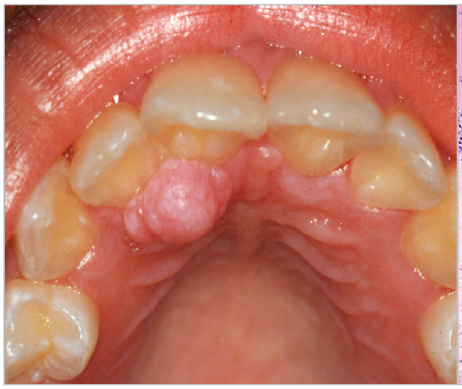

Figure 1. Nodule located in the attached gingiva.

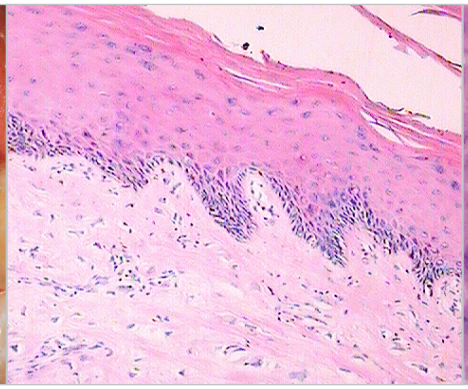

Figure 2. General histological aspects of giant cell fibroma showing a hyperparakertinized squamous stratified epithelium,with long and thin projections directed to the lamina propria (hematoxylineosin stain, original magnification 400X).

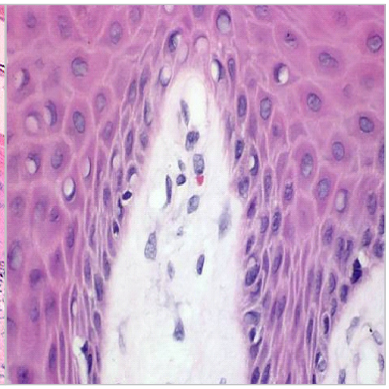

Figure 3. Projections of the epithelium and giant fibroblasts (hematoxyline–osin stain, original magnification 400X).

After establishing the correct diagnosis, GCF management is made by a complete excision. The lesions are rarely recurrent, as was observed in the present case.[4] Since the non-neoplastic lesions are clinically similar, the final diagnosis depends on the microscopic aspects. Based on the fact that pediatric dentists can be the first professionals to face these lesions, they should be well informed about the GCF to include it in the differential diagnosis of non-neoplastic processes.

In conclusion, the present case report described an uncommon case of GCF in a child, showing the clinical and histological features of this lesion, which can provide insights for clinicians. Differential diagnoses and treatment were discussed, particularly those in which the non-neoplastic processes are involved. Although GCF is uncommon in children, being prevalent in teenagers and young adults between the second and fourth decades of life, it must be considered in differential diagnoses of non-neoplastic lesions in children to the correct diagnosis and treatment.

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