Peripheral ossifying fibroma in a newborn: A potential complication after natal teeth extraction

Fibroma osificante periférico del recién nacido: Una potencial complicación posterior a la extracción de dientes natales

Fibroma ossificante periférico em recém-nascido: uma potencial complicação após a extração de dentes natais

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Abstract

Oral soft tissue injuries are rare in newborns and can lead to inappropriate feeding, growth, and cognitive development. Peripheral ossifying fibroma is a reactive lesion of the gingiva, with only five cases reported in newborns.

Objective: To report a case of peripheral ossifying fibroma in a newborn, and to discuss the complications associated with natal/neonatal teeth.

Clinical case: A 4-month-old Mexican male presented two natal teeth that were extracted fifteen days after birth. Subsequently, soft tissue growth was observed in this area, with two radiopaque zones radiographically identified. With the presumptive diagnosis of reactive lesion, an excisional biopsy was performed, with satisfactory evolution during follow-up.

Conclusions: Peripheral ossifying fibroma should be considered as a potential complication due to the presence or extraction of natal/neonatal teeth, and should be treated promptly due to its clinical repercussions.

Keywords: fibroma, natal teeth, alveolar process, gingival overgrowth, gingival diseases

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Resumen

Las lesiones orales de tejido blando son infrecuentes en los recién nacidos, pueden conducir a una alimentación, crecimiento, y desarrollo cognitivo inapropiados. El fibroma osificante periférico es una lesión reactiva de la encía, con solo cinco casos reportados en recién nacidos.

Objetivo: Reportar un caso de fibroma osificante periférico en un recién nacido, y discutir las complicaciones asociadas a dientes natales/neonatales.

Caso clínico: Masculino de 4 meses de edad, mexicano, presentó dos dientes natales que fueron extraídos a los quince días de nacimiento. Posteriormente, se observó un crecimiento de tejido blando en esta área, con dos zonas radiopacas identificadas radiográficamente. Con el diagnóstico presuntivo de lesión reactiva, se procedió a la biopsia excisional, con evolución satisfactoria durante el seguimiento.

Conclusiones: El fibroma osificante periférico debe considerarse como una potencial complicación por la presencia o extracción de dientes natales/neonatales, y debe tratarse oportunamente debido a sus repercusiones clínicas.

Palabras clave: fibroma, dientes natales, proceso alveolar, sobrecrecimiento gingival, enfermedades gingivales

Resumo

Lesões de tecidos moles orais são raras em recém-nascidos e podem levar a alimentação inadequada, crescimento e desenvolvimento cognitivo. O fibroma ossificante periférico é uma lesão reativa da gengiva, com apenas cinco casos relatados em recém-nascidos.

Objetivo: Relatar um caso de fibroma ossificante periférico em recém-nascido e discutir as complicações associadas aos dentes natais/neonatais.

Caso clínico: Um menino mexicano de 4 meses de idade apresentou dois dentes natais que foram extraídos quinze dias após o nascimento. Posteriormente, observou-se crescimento de tecidos moles nesta área, com duas zonas radiopacas identificadas radiograficamente. Com o diagnóstico presuntivo de lesão reativa, foi realizada biópsia excisional, com evolução satisfatória durante o seguimento.

Conclusões: O fibroma ossificante periférico deve ser considerado como uma complicação potencial devido à presença ou extração de dentes natais/neonatais, devendo ser tratado prontamente devido às suas repercussões clínicas.

Palavras-chave: fibroma, dentes natais, processo alveolar, supercrescimento gengival, doenças gengivais

Introduction

Oral lesions occurring as soft tissue growths are uncommon in infants. These lesions include non-neoplastic reactive or proliferative processes and benign and malignant neoplasms.[1] One of them, peripheral ossifying fibroma (POF), is a non-neoplastic reactive lesion seen only in the gingiva, which occurs when periodontal ligament cells are stimulated by irritation or trauma. It has a peak incidence in the second and third decades of life, a predilection for the female gender and the anterior maxillary gingiva.[1–9] It is the most common reactive gingival hyperplastic lesion among children, with no gender predilection,[10-11] or slightly more common in girls.[12] It is most commonly located in the anterior maxillary gingiva,[10,12] and has an 8% recurrence rate.[12] In addition, in newborns, POFs are frequently associated with natal/neonatal teeth[1-3,13] and/or teeth with an altered morphology.[3] They are extremely rare, with only five cases reported to date.[1–3,13,14]

Natal teeth are teeth that are present at birth, and neonatal teeth are teeth that erupt during

the first month of life. These prematurely erupted teeth are rare developmental anomalies, for which a genetic basis has been suggested. They can be attributed to a superficial position of the developing tooth germ in the dental alveolus, which predisposes the tooth to erupt early, more frequently bilaterally in the region of the lower incisors. In addition, most are part of the normal dentition and very few are supernumerary teeth. Therefore, it is important to classify them correctly and find the proper treatment plan, to ensure that future normal dental occlusion is not hindered.[15–18] Several complications associated with the presence[15,16] or extraction[15,19–23] of these teeth have been reported. This report aims to present a case of POF in a Mexican newborn. This is a well-known lesion that is very rare in infants. Since in this case the POF developed after natal teeth were extracted, the main clinical complications associated with these early erupted teeth are also discussed.

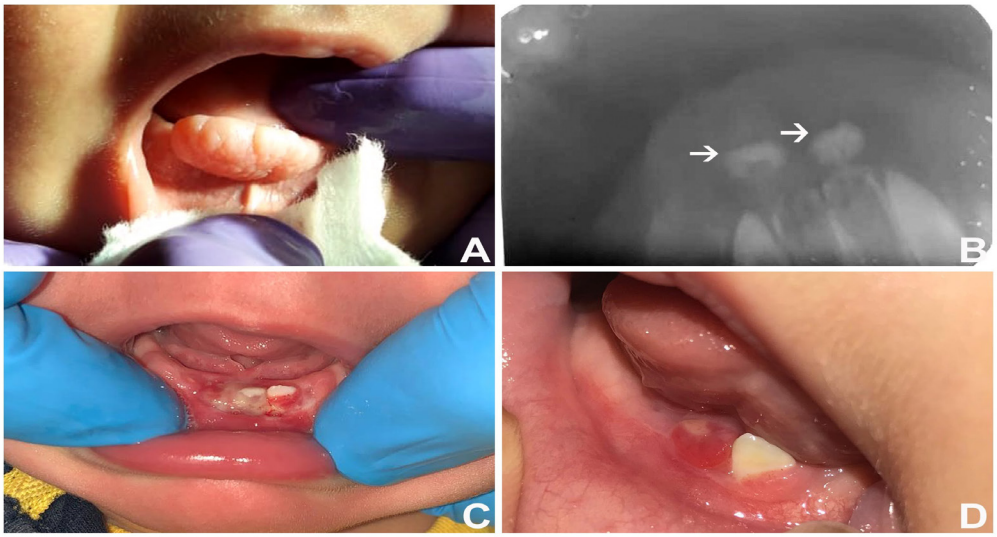
Clinical case

A four-month-old infant presented with a soft tissue growth in the gingiva, on the anterior lower alveolar ridge. The infant was preterm, born at 36 weeks of gestational age. The parents reported that the patient had natal teeth (71 and 81 teeth), which caused discomfort and were extracted 15 days after birth.

The gingival overgrowth in the newborn child developed after the teeth extractions, grew gradually, and showed significant enlargement in the last month. The lesion appeared as a swelling with a pedunculated base, with an irregular and intact surface, similar in color to the adjacent mucosa and with a firm consistency (Figure 1A). The periapical radiograph showed the absence of the germs of teeth 71 and 81 in the dental alveoli, and it also revealed two irregular radiopaque images near these alveoli (Figure 1B).

Considering the clinical diagnosis of a reactive lesion, we performed an excisional biopsy using an electrosurgical knife under general anesthesia. Two weeks after the surgical excision, healing was progressing satisfactorily, and tooth 72 was erupting prematurely (Figure 1C). Three weeks later, there still was residual granulomatous tissue (Figure 1D).

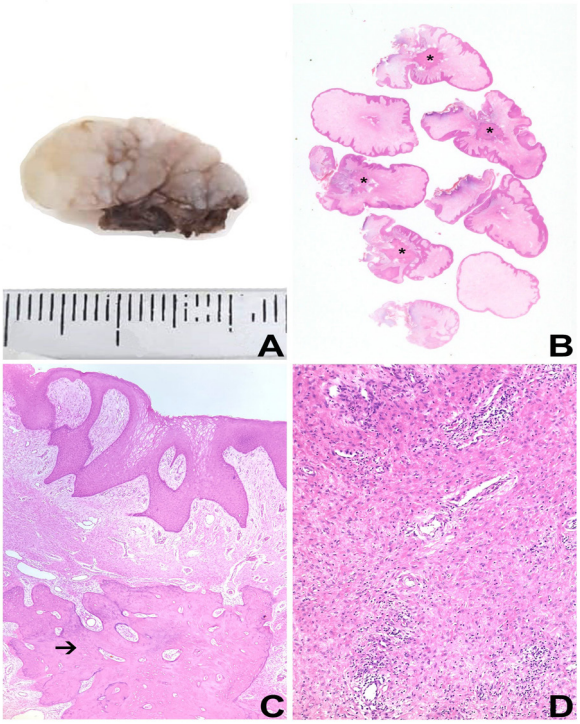
Figure 1: Clinical and radiographic features



A- Soft tissue growth of the gingiva in the lower anterior region, with an irregular surface. B- Periapical radiograph showing the absence of the germs of teeth 71 and 81, and two irregular radiopaque areas (arrows). C- Two weeks after excision, we observed a satisfactory healing process and tooth 72 was erupting. D- Five weeks after excision, tooth 72 continues to erupt, and we observed residual granulomatous tissue.

On macroscopic examination, the lesion measured 2.0 x 1.3 x 0.7 cm, was light brown in color and resistant to cut (Figure 2A). The microscopic examination showed a proliferation of rounded mesenchymal cells consistent with fibroblasts, associated with a large central deposit of mineralized material, similar to bone (Figure 2B and C). A mild lymphocytic inflammatory infiltrate (Figure 2D) was observed, and the surface epithelium showed discrete hyperkeratosis and acanthosis. Peripheral ossifying fibroma was diagnosed.

Figure 2: Macroscopic and microscopic features



A- On macroscopic examination, the lesion was irregularly ovoid in shape, light brown in color and had a firm consistency. B- Microscopically, with low magnification, we observed a well-circumscribed lesion with central mineralization (asterisks) [H&E]. C- The lesion consisted of mesenchymal cells associated with mineralized material, similar to bone (arrow). The surface epithelium showed discrete acanthosis [H&E (x 40)]. D- Proliferation of fibroblasts with round to oval nuclei and scant cytoplasm, associated with mild lymphocytic inflammatory infiltrate [H&E (x 400)].

Discussion

In newborns, POFs have been associated with natal/neonatal teeth.[1–3,13] Natal and neonatal teeth can be linked to complications such as fibrous hyperplasia around the tooth,[24] ulceration on the ventral surface of the tongue, difficulty feeding and swallowing, aspiration of teeth due to the lack of periodontal support, apical abscess, even resulting in a subperiosteal orbital abscess. They have also been reported to cause injuries to the mother's breast and have a psychological impact on the infant and parents. Consequently, tooth extraction is the most common treatment and is preferred if the teeth are supernumerary or extremely mobile.[15,16,25] However, if the teeth have good periodontal support and belong to the normal deciduous dentition, the possibility of not extracting them should be considered. Therefore, periodic clinical follow-up by a pediatric dentist is vital to ensure preventive oral health care.[17]

Some complications associated with the extraction of natal and neonatal teeth have also been reported; for example, if these teeth belong to the normal deciduous dentition, that is, they are not supernumerary, there is an aesthetic concern

because, after extraction, the infant will have no teeth in the area. Other complications reported with the extraction of these teeth that erupt outside the expected period are space loss and mesial drifting of permanent teeth,[15] eruption of a residual natal tooth,[19] accidental displacement of primary teeth,[20] neonatal osteomyelitis,[21] and development of gingival growth.[20,22] Interestingly, there have been reports of soft-tissue growths with dentin-like hard tissue or a tooth-like structure resulting from abnormal continued growth of a residual dental papilla, which includes mesenchymal stem cells.[22,23]

In addition, POF in newborns could result from the low-grade irritation caused by the presence[1] or removal[3] of natal/neonatal teeth. Yip et al., [14] however, reported a case of congenital POF without a natal tooth.

POF in newborns has been reported as a soft tissue growth, measuring 0.8 to 2.5 cm, with an intact or ulcerated mucous surface, more frequently associated with natal or neonatal teeth, with the gingiva in the lower alveolar ridge being the most affected site.[1–3,13,14] This lesion can be treated surgically with a conventional scalpel[3,13,14] or high-power diode laser,[1,2] and recurrence is not expected. It's important to emphasize that this kind of lesion worries parents because, due to its clinical presentation, it affects feeding, breathing, growth, and the cognitive development of patients, making them irritable.[1]

Conclusions

Although POF is a non-neoplastic lesion that is reactive in nature, it requires timely treatment given its significant clinical impact on infants. Pediatric healthcare providers must consider this lesion as a differential diagnosis for gingival overgrowth and a potential complication due to the presence or removal of natal or neonatal teeth.

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Authorship contribution
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2. Acquisition of data
3. Data analysis
4. Discussion of results
5. Drafting of the manuscript
6. Approval of the final version of the manuscript

CMUB has contributed in 1, 2, 3, 4, 5 y 6.
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