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IMPACT OF MULTIPLE GINGIVAL CYSTS AND EPSTEIN'S PEARLS ON BREASTFEEDING IN A NEWBORN: A CASE REPORT

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Abstract

Introduction: Newborn gingival cysts are mucosal lesions of the oral cavity within newborns and appear as multiple small nodular lesions of a creamy white color. Epstein's pearls are yellow-white papules along the midpalatal raphe of neonates. These lesions occur three to six weeks following birth and cause great apprehension and anxiety among parents. In certain cases, these lesions can lead to the discontinuation of breastfeeding, which can have a negative impact on the growth and development of the newborn. **Case Report:** In this article, we report the case of multiple gingival cysts associated with Epstein's pearls in a 3-week-old female patient. The patient's parents were worried about the discovery of these lesions and failure to diagnose after a first consultation with their primary care provider. The patient's mother harbored concerns that the condition might be indicative of a significant tumor-related ailment and feared potential breast contamination during breastfeeding. As a result, she opted to cease breastfeeding and transitioned to expressing breast milk for bottle feeding purposes. The management started by reassuring the mother, downplaying the situation, explaining the nature of the observed lesions, and emphasizing that they have no impact on breastfeeding. Additionally, the benefits of direct breastfeeding for both the mother and the newborn's development were highlighted. Then, therapeutic abstention and monitoring were indicated. The follow-up showed a complete regression of the lesions and the resumption of breastfeeding.

Keywords: Breast feeding; Gingiva; Newborn; Odontogenic Cyst, Case report

Introduction

Newborn gingival cysts, also known as gingival cysts of infants or dental lamina cysts are nodules located in the alveolar mucosa on newborn alveolar ridges. They originate from keratin-producing epithelial lining which constitutes the remains of the dental lamina and appear as whitish or creamy white papules that can be isolated or multiple [1-5]. They present a prevalence of 13,8% within newborns, without gender predilection. Although their occurrence is relatively high, newborn gingival cysts are rarely detected by either parents or doctors, due to their transient nature.

Because it's rarely detected, parents are anxious when they are faced with such pathology. Also, misdiagnoses are very common leading to unnecessary or iatrogenic treatment [5, 6]. Epstein's pearls, also called midpalatal raphe cysts of the newborn, arise from epithelial remnants trapped along the line of fusion during the development of the palate [2, 3, 7].

In this article, we report the case of multiple gingival cysts associated to Epstein's pearls in a 3-week-old newborn female, who was referred to our pediatric dentistry department at the Center of Consultation and Dental Treatment in Rabat- Morocco. The parents were concerned about the discovery of these lesions and failure to diagnose after a first consultation with an external colleague. In particular, the mother believed it was a serious tumor-related condition and was concerned about breast contamination during breastfeeding. She reported discontinuing breastfeeding and started breast milk expression and bottle feeding. The initial approach involved providing reassurance to the mother, minimizing the significance of the situation, elucidating the characteristics of the observed lesions, and emphasizing that they do not affect breastfeeding. Furthermore, the advantages of direct breastfeeding for the well-being of both the mother and the newborn were underscored. Subsequently, therapeutic abstention and monitoring were recommended. The follow-up assessment revealed a complete regression of the lesions and the resumption of breastfeeding.

Case Report

A 3-week-old female patient was referred by an external colleague to our Department of Pediatric Dentistry at Center of Consultation and Dental Treatment in Rabat- Morocco, the patient's mother was complaining about swelling in her newborn's gums, located in the area of upper and lower molars. The parents were very concerned because the first consultation with their primary care provider did not yield any diagnosis. The patient had no medical problems and was born by natural childbirth. Her mother stated that the lesions were noticed since birth.

After the failure to diagnose, the patient's mother was concerned that the condition might be indicative of a significant tumor-related ailment and feared potential breast contamination during breastfeeding. As a result, she opted to cease breastfeeding and transitioned to expressing breast milk for bottle feeding purposes.

Extraoral examination revealed a symmetric face and the presence of normal lymph nodes.

Intraoral examination showed the presence of four lesions with a diameter ranging from 4 to 7mm in the crestal ridges of the maxillary right and left first primary molars and the mandibular right and left first primary molars **(Figure 1-2).**

The nodules had a smooth surface and had the same color as the surrounding oral mucosa. No abnormality was detected in neighboring tissue.

The patient also had two whitish/yellowish small cysts formations [1-2 mm in diameter], situated along the mid-palatal raphe region, along the line of fusion. these cysts were not noticed by the patient's mother **(Figure 1).**

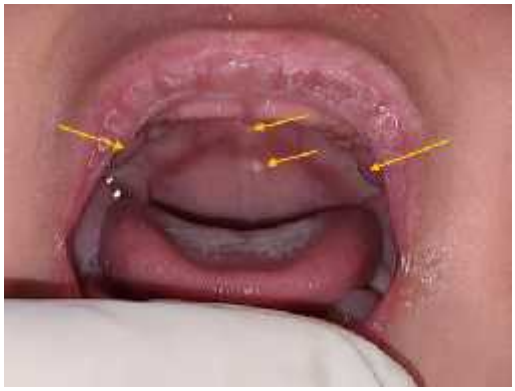

Figure 1: *First dental visit: 3 weeks old baby: presence of two lesions situated in the presumptive location of the 54, 64 teeth, and 2 whitish/yellowish small cysts formations, situated along the mid-palatal raphe region.*

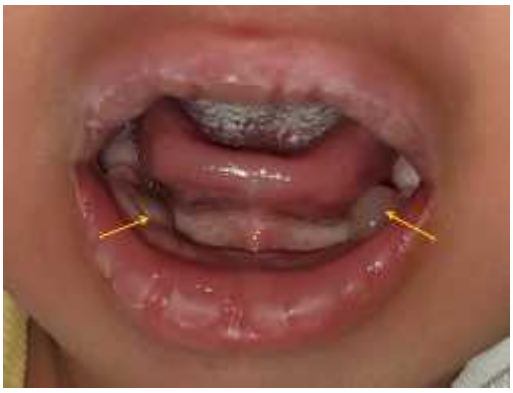

Figure 2: *First dental visit: 3 weeks old baby: presence of two lesions situated in the presumptive location 74, 84 teeth, with a smooth surface and the same color as the surrounding oral mucosa.*

Clinical features pointed to the diagnosis of multiple gingival cysts in newborns for lesions situated in the alveolar ridges, and Epstein's pearls for lesions situated in the palate.

Reassuring the patient's parents was our first priority. We explained to them the nature of the observed lesions and assured them that they had no impact on breastfeeding. Additionally, we highlighted the advantages of direct breastfeeding for both the mother and the newborn's development.

Therapeutic abstention and regular monitoring were indicated. Then, we insisted that follow up was important until complete regression of these lesions. The parents agreed with our approach.

Six weeks later, the patient returned for a check-up, and we noticed that all the lesions had started to decrease. Breastfeeding had been resumed. The follow-up at 3 months showed an important regression of the lesions **(Figure 3-a, 3-b, ,4-a, 4-b).**

Figure 3-a: 3 months follow-up: 15 weeks old baby: an important decrease of the right maxillary lesion and a disappearance of the two palatal cysts were noticed.

Figure 3-b: *3 months follow-up: 15 weeks old baby: an important decrease of the left maxillary lesion is noticed.*

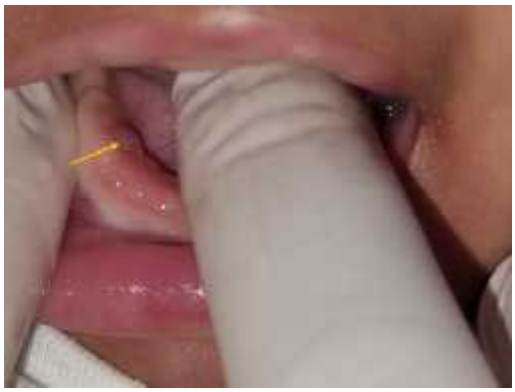

Figure 4-a: *3 months follow-up: 15 weeks old baby: an important regression of the mandibular right sided lesion.*

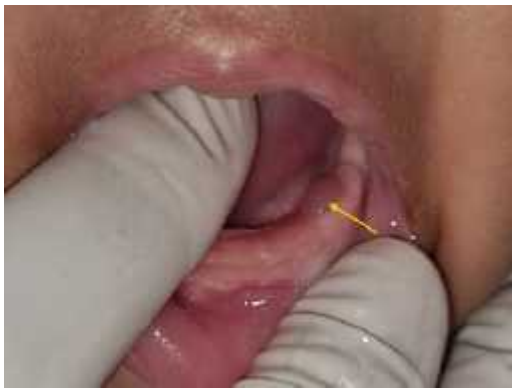

Figure 4-b: 3 months follow-up: 15 weeks old baby: an important regression of the mandibular left sided lesion.

Since the newborn had consulted during the period of the peak of covid-19, check-up appointments were more widely spaced than usual, therefore our contact with the patient's mother was maintained over the phone, and she informed us of the progressive regression of the lesions. After 12 months, the clinical follow-up showed complete disappearance of the lesions, which coincided with the dental eruption **(Figure 5a, b).** Direct breastfeeding was sustained.

Figure 5a: *One-year follow-up: complete disappearance of the maxillary lesions and eruption of the first primary molars.*

Figure 5b: *One-year follow-up: complete disappearance of all the mandibular lesions and eruption of the first primary molars.*

Discussion

Newborn gingival cysts, also referred to as gingival cysts of infants or dental lamina cysts, are odontogenic cysts that can be found in the oral mucosa of both infants and adults [8]. The infant form is common, with a reported prevalence of 13,8% in neonates, but it is rarely observed beyond the age of three months [5, 6, 8].

The precise etiology of these cysts remains uncertain. It has been suggested that they originate from the rests of Serres, which correspond to remnants of the dental lamina persisting in the gingival or alveolar soft tissues following tooth development [2,4,7-10].

Clinically, gingival cysts in infants present as small, often multiple nodules measuring between 2 and 3 mm, located on the alveolar mucosa of the edentulous maxillary or mandibular ridges [7,8]. In adults, they appear as small, painless, blister-like elevations of the attached gingiva [4,8]. These lesions are characterized by light blue to bluish-grey translucent nodules, which may occasionally be found at the junction between the movable mucosa and the attached gingiva. They are more frequently observed in the maxilla than in the mandible [2,4,8,11].

Histopathologically, the cysts are located beneath the normal oral epithelium and are generally non-inflamed. They are lined by a single or double layer of cuboidal to squamous epithelial cells, typically lacking rete ridges. In some cases, the epithelial lining is thicker and exhibits a stratified squamous appearance. The connective tissue wall may also contain epithelial islands resembling epithelial plaques. Gingival cysts in children are rarely studied histologically, however, when examined, most are lined by a thin keratinized epithelium [3,8].

The clinical appearance of the lesions guides the diagnosis. While radiographs may occasionally reveal superficial erosion of the underlying bone cortex, they generally fail to detect the lesion. Consequently, diagnosis relies mainly on clinical examination and the characteristic features of the lesion [2,8,12-14].

The differential diagnosis should first consider congenital epulis of the newborn, which typically appears on the anterior ridge of the maxilla [5]. Unlike gingival cysts, this lesion does not regress spontaneously and may interfere with breathing and feeding [5,15]. Natal and neonatal teeth, though rare, should also be considered, particularly when located in the lower incisor region [10]. These teeth are often highly mobile due to their short roots and are frequently associated with syndromic conditions such as Pierre Robin or Rubinstein-Taybi syndromes [2,4,16]. The differential diagnosis should also include Bohn's nodules and Epstein pearls [5].

Epstein's pearls, also referred to as midpalatal raphe cysts of the newborn, originate from epithelial remnants along the fusion line during palate development. They are highly prevalent, with reported rates ranging from 65% to 85% in neonates. In our patient, Epstein's pearls were diagnosed based on the presence of two small cysts located along the midpalatal raphe, corresponding to this fusion line. Clinically, they present as 1–3 mm yellow-white papules, typically in clusters of two to six, but they can also appear as isolated cysts. They are characterized by a typical clinical presentation and a keratin-filled histological structure. However, they can be diagnosed based only on clinical appearance [2,3,4,7].

As for the evolution, both newborn gingival cysts and Epstein's pearls are self-limiting and resolve spontaneously without requiring any treatment [6,8]. Complete regression typically occurs within 2 to 5 weeks without complications [2,3,7,10,17,18]. This transient nature is believed to result from the fusion of the cyst wall with the oral epithelium, allowing the cystic content to discharge [4,19,20]. Moreover, these cysts are rarely observed beyond the age of three months [2].

The main challenge associated with these lesions lies in the concern they generate among parents, the limited awareness among many pediatric practitioners, and their potential impact on early cessation of breastfeeding, as observed in our patient. Pediatric dentists play a crucial role in reassuring parents by explaining that these cysts are benign, painless, and transient, with no impact on feeding or risk of complications. They should emphasize that therapeutic abstention, coupled with appropriate follow-up, is both sufficient and necessary until the lesions fully regress [2,9].

In our patient, regression was monitored clinically through regular follow-up appointments. The criteria for assessment were based on the progressive reduction in size of the cystic nodules during oral examination. An initial decrease was noted at six weeks, and significant regression was observed at the three-month follow-up. Complete clinical disappearance of all lesions was confirmed at 12 months, coinciding with the eruption of the primary teeth. These observations were supported by direct clinical evaluation and parental reports communicated during the follow-up period.

Several clinical protocols across different countries support a conservative, observation-based approach for managing congenital oral cysts in neonates, such as gingival cysts and Epstein's pearls. Hernández Ordaz et al. emphasized the importance of periodic clinical monitoring and parental reassurance, underscoring the benign, self-limiting nature of these lesions [21]. These recommendations align with our decision to combine therapeutic abstention with structured follow-up, tailored to the patient's individual context.

Conclusion

Oral lesions in neonates encompass a wide range of conditions that often provoke anxiety and concern among parents. Newborn gingival cysts and Epstein's pearls are benign mucosal cysts that undergo spontaneous regression. Therefore, healthcare professionals involved in neonatal care should be able to recognize these lesions accurately, provide appropriate information to parents, emphasize their harmless nature and lack of impact on breastfeeding, and avoid unnecessary interventions. Establishing a periodic follow-up is essential to ensure complete regression of the lesions.

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