Case Report

Clinical and histopathological features of congenital epulis in a newborn submitted to laser surgery

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Abstract

Congenital epulis (CE) is a rare condition in newborns, whose histogenesis remains unclear. It mostly presents as a circumscribed mass in the maxilla alveolar ridge of female neonates and can interfere with their normal breathing and breastfeeding. This benign oral lesion usually appears as a pedunculated nodule covered with normal mucosa that extends from the anterior vestibular alveolar ridge up to the posterior region. There are some pathological conditions that show clinical and histopathological features similar to those of CE, such as granular cell tumor, gingival cyst of the newborn, vascular malformations and others. This case report aimed to describe the clinical and pathological features of a newborn patient with a clinical and histopathological diagnosis of CE on the right side of the maxillary alveolar ridge, treated with excision by laser surgery, with a follow-up of 5 months without any sign of recurrence.

Keywords: Congenital epulis, gingival diseases, lasers, semiconductors, surgical treatment

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INTRODUCTION

The congenital epulis (CE) of the newborn is a rare oral pathological condition that is described as a circular soft tissue mass extending mainly from the anterior maxilla, projecting toward the posterior alveolar ridge, with the potential to interfere with normal breathing and breastfeeding of the female newborn.[1]

Clinically, it occurs as a single, exophytic, pedunculated mass, with a smooth or lobulated surface, more often on the maxillary alveolar ridge than the mandibular bone. However, there are a few cases reported in others sites in the oral cavity, such as the tongue and the lesions may be multiple in about 10% of the cases.[2-4]

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Histopathologically, the typical aspect of CE is characterized by the presence of large, rounded cells with abundant eosinophilic cytoplasm and round-to-oval nuclei. The contemporary literature has shown various histological characteristics, including a fibrous and granulomatous appearance.[1-4] The most accepted hypothesis with reference to its origin is that these types of lesions are derived from primitive mesenchymal cells that have been submitted to molecular and cytoplasmic transformations, resulting from epigenetic factors.[2,3]

Other lesions such as the gingival cyst of the newborn, vascular malformations, cystic higroma, melanotic neuroectodermal

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tumor of infancy, oral teratoma and malignant tumors such as the rhabdomyosarcoma can be clinically similar to the congenital granular cell epulis,[1,5] but their clinical behavior and histological aspects differentiate them.

The clinical relevance of CE for clinicians, pediatrics, gynecologists, obstetricians, surgeons and oral and maxillofacial surgeons must be emphasized to enable them to make an accurate diagnosis, based on data that would be possible to obtain in the prenatal phase by ultrasound.[5] Cases of CE may pose a great challenge because of some manifestations that may present an aggressive appearance, with large size, causing interruption of normal breathing and difficulties during breastfeeding.[2,4]

Surgical management is the gold standard approach for treating this condition. Conventional surgical excision has shown satisfactory results, but when compared with surgeries in which laser was used, especially relative to clinical recovery, better results have been seen with the latter approach in an enhanced time of follow-up. Spontaneous regression, mainly of small lesions, may occur.[2,4]

CASE REPORT

The patient, a 30-day-old postnatal female child was referred to the Special Laboratory of Laser in Dentistry (LELO), University of Sao Paulo, Brazil, for clinical attendance and examination of a large solitary mass protruding from the mouth. The infant was born at 32 weeks of gestation through vaginal delivery following an uneventful pregnancy and weighed 2500 g. The infant was a result of nonconsanguineous marriage with no other associated congenital abnormalities or malformations. Clinical examination revealed the presence of fleshy, smooth-surfaced, sessile masses – the larger one being attached to the left anterior maxillary alveolar ridge. A diagnosis of fibroma was tentatively made, and it was decided that the lesion should be removed completely.

A high-intensity, 1.2 W diode laser (976 nm) was used in contact mode under local anesthesia. Irradiation was delivered using a flexible quartz fiber 300 μm in diameter, in continuous wave mode (Solase, China, Shenyang), as observed in Figure 1.

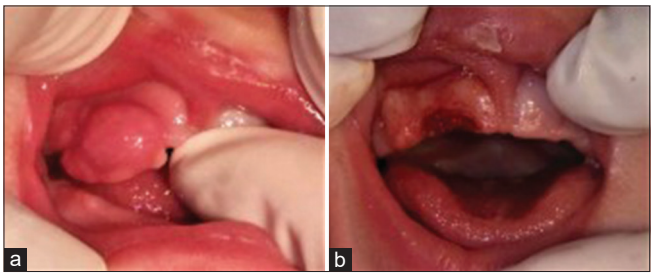

Figure 1: (a) Congenital Epulis in the maxillary alveolar ridge; (b) Clinical appearance after surgical removal of congenital epulis with laser

Histopathologically, the lesion was composed of large round granular cells with eosinophilic cytoplasm and round-to-ovoid nuclei, occupying the entire lamina propria of the mucosa. A thin layer of dense connective tissue separated the cellular proliferation from the lining epithelium. The conclusive diagnosis of CE was made, shown in Figure 2.

The total healing of the wound occurred in 2 weeks. Two months of follow-up showed a favorable good condition, as visualized in Figure 3.

DISCUSSION

The term epulide is used to refer to all gingival tumor formation. CE is, therefore, a rare, congenital and benign gingival mass whose evolution occurs after birth, exclusively in newborns, with a high prevalence in females.[3,5]

Differential diagnosis should be made mainly with hemangioma, lymphangioma, fibroma and rhabdomyosarcoma.[2,4] Accurate diagnosis is made by histopathological examination, as was established in the present case.

Although benign, CE must be correctly diagnosed and treated to avoid trouble in the development of the jaws in children due to its large size and location. As shown in this clinical report and contemporary literature,[2] the lesion decreases children's sucking capability, and for this

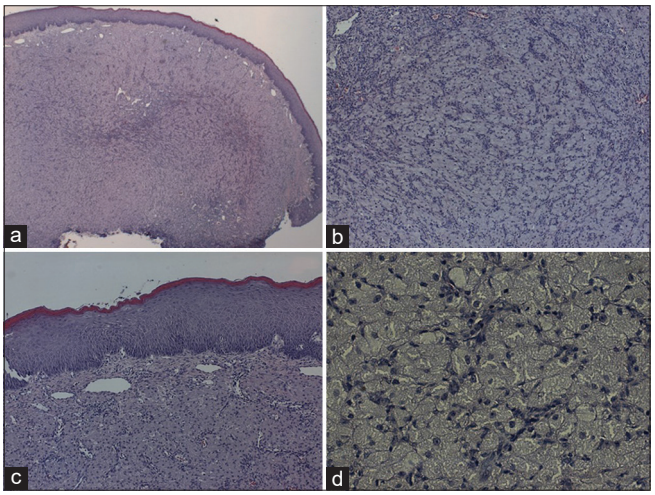

Figure 2: Histopathological aspect of the lesion. (a) A low-power view of the lesion showing the atrophic lining epithelium and the nodular tumor mass. (b) Cells arranged in small lobules separated by fibrous strands. (c) A vascular area in the periphery of the lesion. (d) High-power view of rounded cells with eosinophilic granular cytoplasm

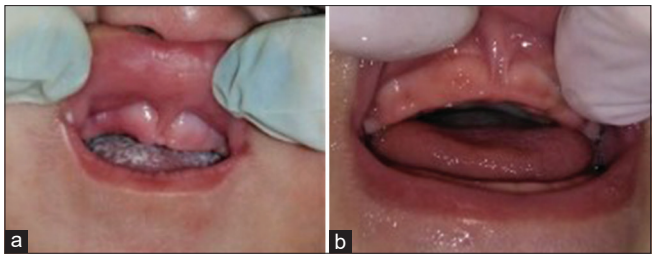

Figure 3: Follow-up after laser surgery. (a) Two weeks after laser treatment with satisfactory healing of wound process; (b) Two months of follow-up after laser surgical treatment. Complete recovery and healing of wound were observed

reason, its clinical appearance, especially in cases of huge lesions, usually causes anxiety in their parents, whereas, once the lesion is removed, healing is usually achieved without harming the oral tissues and development of the child.

The benefits of laser removal were demonstrated by the fact that almost all procedures could be accomplished in an outpatient environment, there was reduced blood loss in the intraoperative phase, no suture techniques were necessary and postoperative pain and edema were minimal. After the surgical procedure, children may be breastfed as soon as the laser surgery has been completed.

CONCLUSION

The portability and low cost of the diode laser, after its appropriate use, proved to be safe and effective for the treatment of CE, with a consistent outcome for the patient. It showed that surgical lasers could be effectively and safely used for surgical interventions in babies.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initial s will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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