Large Congenital Epulis in a Newborn: Diagnosis and Management

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Introduction

Congenital epulis of newborn is an extremely rare gingival tumor that occurs typically on the alveolar ridge of the jaw.¹ It is also known as granular cell tumor of gingiva, congenital granular cell tumor, congenital granular cell fibroblastoma, congenital granular cell myoblastoma, Neumann tumor, and congenital granular epulis.² We report a case of a large epulis in a newborn causing feeding and breathing difficulties which were treated by prompt surgical intervention.

Case Report

A 13-day-old female child presented to us with a mass protruding from mouth since birth. The mass prevented normal closure of the mouth and was causing feeding difficulty. On examination, a huge pedunculated, smooth surfaced, pink colored mass of size 2.5 × 2 × 1.5 cm was seen arising from left upper gingival and anterior part of hard palate, with a small area of superficial ulceration (Figure 1). On palpation, mass was found attached to the left superior alveolar arch. Mass was soft to firm in consistency, covered with smooth mucosa, and was nontender. Similar type mass of size 1 × 1 cm was noticed in left lower alveolar arch. General physical examination including systemic examination and laboratory tests were normal. Magnetic resonance imaging (MRI) of face and neck (Figure 2) revealed polypoidal soft tissue lesion appearing hypointense on both T1- and T2-weighted images, measuring approximately 22 × 14 × 19 mm and extending from lower part of nasal cavity to left half of superior alveolar arch with no obvious internal flow voids. Provisional diagnosis of congenital epulis was made and surgical excision under general anesthesia planned.

Both superior and lower alveolar arch masses were excised using cautery and sent for histopathological evaluation (Figure 3). Postoperative period was uneventful. Child recovered well and had no recurrence after 9 months of follow-up.

Histopathological examination confirmed the diagnosis of congenital epulis (Figure 4).

Discussion

The term “Epulis” is derived from a Greek word meaning “on the gum.”³ This gingival growth was first described in 1871 by Neumann.³ Congenital epulis of newborn is an extremely rare gingival tumor that occurs typically on the alveolar ridge of the jaw. These are seen 3 times more frequently in the maxillary alveolus and female to male ratio is 10:1.¹ The exact etiology of this entity is unknown, but several theories such as origin from epithelial rests, undifferentiated mesenchymal cells, pericytes, fibroblasts, smooth muscle cells, nerve related cells, and odontocytes have been proposed.⁴ An unproven theory of endogenous hormonal stimulus has also been proposed in view of female predominance.⁵

The diagnosis of congenital epulis is clinical hence neonatologist, dentists, and otolaryngologist should be aware of this entity. These masses are mostly recognized at birth or just after birth. Clinically, the tumor presents in the alveolar mucosa as a smooth surfaced, pedunculated, reddish-pinkish mass of varying size.⁶ However, multiple lesions may occur in the same or different alveolar ridges and have been reported in 5% to 16% of the cases.⁷ No dental abnormalities or congenital malformations have been associated with this entity.⁸ Prenatal diagnosis is difficult due to lack of specific signs and development of tumor after 22nd week of gestation.⁹ Fetal 3-dimensional ultrasound and MRI can

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provide the diagnosis by the 36th week of gestation, thereby helping in early planning and management of the newborn. As prenatal ultrasonography is nonspecific, the differential diagnosis of encephalocele, dermoid cysts, hemangioma, lymphatic malformations, neuroectodermal tumor of infancy, and rhabdomyosarcoma should always be kept in mind when dealing with congenital oral masses. Perinatal MRI of oral cavity can give valuable information regarding the nature and extent of the mass and hence is helpful in differentiating congenital epulis from other masses. Preoperative MRI becomes an imperative diagnostic tool for surgical planning.

Epulis is a benign mass and no metastasis has been reported so far. Due to its location and size it can cause mechanical obstruction leading to feeding difficulty, cyanosis, dyspnea, and has a potential to cause death of the child from asphyxia during the perinatal and postnatal period. Very small lesions are asymptomatic and sometimes undergo spontaneous regression. Large lesions interfering with feeding and breathing require prompt surgical intervention, that is, simple surgical excision under local or general anesthesia. Surgical excision is curative, and no recurrence has been reported.

Figure 1. Clinical image. A, Pedunculated ulcerative mass arising from the left maxillary alveolar ridge (arrow), small smooth mass seen in mandibular alveolar ridge (arrow head). B, Broad-based stalked mass arising from left superior alveolar ridge. C and D, Post-excision clinical image.

Figure 2. Magnetic resonance imaging (MRI) face. Axial T2-weighted MRI section shows well-defined lobulated soft tissue lesion (arrow) with central isointensity and peripheral hyperintensity relative to the muscle seen lying in close relation to superior alveolar arch.

Figure 3. Gross specimen of upper and lower alveolar arch mass measuring 24 × 14 × 19 mm and 10 × 8 × 6 mm, respectively, sent for histological examination.
In our case, we performed the excision because of large pedunculated tumor, as it was interfering with feeding and breathing.

Declaration of Conflicting Interests
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Figure 4. Photomicrograph. A, Hematoxylin and eosin (H&E) section (×40) showing flattening of rete ridges and tumor cells arranged in sheets (black star) in the dermis. B, H&E section (×400) showing polygonal cells with granular cytoplasm, central to eccentric vesicular nucleus, (yellow arrow) abundant vessels and lymphocytes (black arrow) interspersed between them.