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Case Report

Congenital Epulis of the Maxillary Alveolar Ridge in A 10-Day-Old Infant: A Case Report

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A B S T R A C T

Background: Congenital epulis (CE), also known as congenital granular cell tumour of the newborn, is a rare benign neoplasm presenting as an oral mass at birth. Although histologically characterized by large granular cells, it exhibits distinct immunohistochemical properties differentiating it from adult granular cell tumours. CE most commonly arises from the alveolar ridge and may cause functional challenges, particularly feeding difficulty or, less frequently, airway compromise. Early recognition and appropriate management are critical to prevent nutritional compromise and ensure optimal neonatal outcomes1-3.

Case presentation: We report the case of a 10-day-old neonate presenting with a pedunculated gingival mass noted immediately after birth. The lesion was located on the alveolar ridge and was associated with difficulty in breastfeeding. After multidisciplinary evaluation, complete surgical excision was performed. Histopathology confirmed congenital epulis exhibiting sheets of polygonal cells with abundant granular cytoplasm. Postoperative recovery was uneventful, with rapid resolution of feeding difficulties and no recurrence at follow-up.

Conclusion: Congenital epulis, though rare, should be considered in the differential diagnosis of neonatal oral masses. Surgical excision is curative and indicated when the lesion interferes with feeding or airway. With complete removal, prognosis is excellent, and recurrence is extremely uncommon. The clinical and pathological features presented here underscore the importance of timely diagnosis and management.

Introduction

Congenital epulis is a rare benign tumour of neonates that develops on the gingiva, usually on the maxillary alveolar ridge but occasionally on the mandibular ridge. First described in the late 19th century, its etiology remains uncertain[4]. The lesion is more prevalent in females, and most cases are diagnosed at birth, though prenatal detection via ultrasonography or MRI has been reported for large masses[5,6]. Clinically, CE appears as a smooth, pedunculated, or sessile mass that varies in size from a few millimeters to several centimetres. While many lesions remain asymptomatic, larger tumors can disrupt normal neonatal feeding and, rarely, airway patency[1,2,7].

CE shares histological similarity with adult granular cell tumors but differs significantly in its immunohistochemical

profile. Unlike adult counterparts, congenital epulis commonly lacks S-100 protein expression and exhibits a benign course with extremely low risk of recurrence following complete excision[3,5]. Given its rarity, most knowledge of congenital epulis arises from case reports and small case series. Management strategies range from conservative observation for small, asymptomatic lesions to complete surgical removal when functional impairment is present[1,3,7].

The current report details the clinical presentation, surgical management, and histopathological findings of congenital epulis in a 10-day-old neonate.

Case Presentation

A 10-day-old female neonate was referred to the paediatric oral surgery clinic for evaluation of an oral mass present since birth. The infant was born at term via uncomplicated vaginal delivery with normal Apgar scores. No prenatal imaging had identified the lesion. The family reported progressive difficulty with breastfeeding, attributed to the presence of the oral mass. There were no episodes of respiratory distress or cyanosis.

Physical examination revealed a stable neonate with normal vital signs. Intraoral inspection detected a well-demarcated, pedunculated mass arising from the anterior maxillary alveolar ridge, measuring approximately 2.3 × 1.8 × 1.5 cm. The lesion was pink, smooth, non-ulcerated, and non-tender on gentle palpation. The remainder of the oral cavity and head and neck examination were unremarkable.

Given the size of the lesion and its interference with efficient feeding, surgical excision was recommended after multidisciplinary consultation involving neonatology, anesthesiology, and pediatric surgery teams[2,7].

Surgical management

Under general anaesthesia with endotracheal intubation adapted for neonatal airway management, the lesion was approached intraorally. The base of the pedicle was identified, and sharp dissection was carried out to achieve complete removal with preserved surrounding mucosa. Minimal bleeding was encountered, and meticulous haemostasis was achieved. The surgical site was closed with absorbable sutures, given the age of the patient and the characteristics of the gingival tissues. No intraoperative complications were noted.

The excised mass was sent for histopathological analysis. The immediate postoperative period was uneventful. The neonate resumed oral feeding within 8 hours of surgery, with significant improvement in latch and intake. The infant was discharged home after 48 hours with instructions for routine postoperative care and outpatient follow-up.

Histopathological findings

Gross examination of the specimen revealed a pedunculated mass with a smooth external surface and firm consistency. On microscopic evaluation, the lesion was composed of sheets of large polygonal cells with abundant eosinophilic granular cytoplasm and small, centrally located nuclei. The overlying epithelium was thin and atrophic, a characteristic feature often described in congenital epulis[3,5].

No significant cellular atypia, mitotic figures, or necrosis were observed. Immunohistochemistry demonstrated negative staining for S-100 protein, consistent with the diagnostic profile of congenital epulis and distinguishing it from adult granular cell tumors, which typically exhibit strong S-100 positivity[5,6].

These features confirmed the diagnosis of congenital epulis.

Follow-up and outcome

At the two-week postoperative review, the surgical site showed satisfactory healing with no signs of infection or dehiscence. Feeding had normalized, and weight gain was appropriate for age. At three months, clinical evaluation revealed a well-healed alveolar ridge with no evidence of recurrence. The parents reported no concerns with feeding or oral function.

Follow-up planning includes continued monitoring of oral development and dentition as the child grows, given the lesion's origin from the gingival ridge and potential implications for future dental eruption.

Discussion

Congenital epulis is an uncommon tumour-like lesion that poses important clinical considerations despite its benign nature. It most often occurs on the alveolar ridge and shows a strong female predominance in published series[1,2]. Although most lesions are recognized at birth, larger masses may occasionally be detected on prenatal imaging, which can be helpful in anticipating potential feeding or airway issues and in planning delivery and neonatal care when necessary[5,6].

Clinically, congenital epulis usually appears as a pedunculated or sessile mass arising from the gingiva of a neonate. The surface is typically smooth and pink, sometimes with superficial ulceration. The main concern is generally functional rather than oncologic. Larger lesions may interfere with breastfeeding by preventing an effective latch, and in rare situations they can compromise the airway[1,2,7]. Because neonatal oral masses have a broad differential diagnosis, other conditions such as vascular malformations (including hemangioma), ranula, lymphatic malformations, teratoma, and rare malignant tumors like rhabdomyosarcoma should be considered. For this reason, definitive diagnosis relies on histopathological evaluation after excision or biopsy[1,3].

On histological examination, congenital epulis characteristically shows large granular cells arranged in sheets or nests beneath a thin or sometimes atrophic epithelial layer[3,5]. An important distinguishing feature is the absence of S-100 protein expression. This finding helps differentiate congenital epulis from adult granular cell tumours, which are typically S-100 positive[5,6]. Other markers, such as vimentin, may also be expressed, although their diagnostic contribution is less specific and must be interpreted alongside the morphological features. Together, these characteristics support the diagnosis and help exclude other entities.

The exact origin of congenital epulis remains uncertain. Several hypotheses have been proposed, including a reactive process, a hamartomatous lesion, or a proliferation derived from primitive mesenchymal cells. The absence of S-100 expression has led many authors to question a Schwann cell origin, which further distinguishes congenital epulis from adult granular cell tumors[3,5]. So far, no consistent genetic or molecular driver has been identified.

Management mainly depends on the functional impact of the lesion. Small, asymptomatic masses that do not interfere with feeding or breathing can sometimes be managed conservatively, particularly since spontaneous regression has been described in some infants[1,7]. However, because feeding difficulties are relatively common and the presence of an oral mass in a newborn can be concerning for parents, surgical excision remains the most frequently chosen approach. Complete removal is usually curative, with no reported malignant transformation and very rare recurrence when excision is adequate[2,3,7].

Preoperative evaluation should include assessment of airway patency and feeding ability. In cases where large lesions are detected prenatally, coordination between maternal-fetal medicine specialists and neonatal teams can help plan delivery in a controlled setting with immediate airway support if needed[5,6]. In the present case, although the mass was relatively large, no airway compromise was observed, and feeding difficulty was the main reason for surgical intervention.

Overall, congenital epulis carries an excellent prognosis after complete surgical excision. Long-term outcomes are generally very good, with normal oral function and development. Recurrence is extremely uncommon, and no cases of malignant transformation have been reported in the literature[1-3].

Conclusion

Congenital epulis is a rare benign oral lesion of neonates that should be considered in any newborn presenting with a gingival mass. Clinical assessment, supported by careful histopathological evaluation, enables accurate diagnosis. Management should be tailored to the clinical context, with surgical excision recommended for lesions that interfere with feeding or pose potential airway risk. With complete excision, outcomes are excellent and recurrence is rare. Long-term follow-up focuses on oral development and dentition.

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