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Congenital epulis: case report and literature review.

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Abstract

Introduction: Congenital epulis, also known as congenital granular cell tumor or Neumann tumor, is a rare benign lesion that appears in the oral cavity of newborns, with a marked predilection for female sex and the anterior maxillary gingiva.

Clinical case: A full-term female newborn presented with an exophytic mass of approximately 2 cm on the anterior maxillary gingiva, which was detected at birth and interfered with feeding. Surgical resection was performed under general anesthesia without complications. The histopathological findings were consistent with congenital epulis.

Discussion: Congenital epulis is a neoplasm exclusive to the neonatal period that is characterized by vimentin-positive and S100-negative granular cells and has no potential for recurrence or malignant transformation. Surgical resection is indicated when it affects vital functions such as feeding or breathing.

Conclusions: Congenital epulis should be considered in the presence of oral masses in newborns. Its clinical and histological diagnosis allows for effective surgical treatment with an excellent prognosis.

Keywords: Congenital epulis; granular cell tumor; newborn; oral cavity; pediatric surgery.

Introduction

Congenital epulis, also known as congenital granular cell tumor (CGCT), is among the rarest pathological entities in the spectrum of neonatal oral tumors. It manifests as a soft-tissue mass, usually pedunculated, that emerges from the alveolar process in newborns [1,2]. Since its initial description by Neumann in 1871 [3], CGCT has maintained an aura of clinical rarity, with an estimated incidence of 6–9 cases per million births. To date, the worldwide literature contains fewer than 250 documented cases, which underscores the importance of reporting new presentations to refine diagnostic and management protocols [4]. A distinctive epidemiological feature is its marked sex predominance, which affects females at a ratio of 8:1 to males [5]. The predominant location is the maxillary alveolar process, specifically in the anterior region (incisor area), although less frequent cases have been reported in the mandible or in multiple forms (10% of cases).

Despite many years of research, the cause of congenital epulis is still debated. Current theories point to a multifactorial mesenchymal origin, possibly from fibroblastic, histiocytic, or neural crest cells.

The strong preference for females has led to the idea that prenatal hormonal influences, such as estrogens and progesterone, play a key role in intrauterine growth. This idea is supported by clinical observations of spontaneous regressions after birth, once maternal hormonal stimulation stops [6, 7].

Although it is a benign and noninvasive lesion, its presence can compromise immediate vital functions in the newborn, such as airway patency or the ability to suck swallow. Therefore, differential diagnosis—which includes teratomas, hamartomas, and gingival cysts—and timely intervention are crucial to ensure patient stability.

Case report

Medical records

This is a female patient, a full-term newborn born to a 27-year-old mother with a history of three pregnancies and one delivery, with no miscarriages. The pregnancy was monitored through seven prenatal checkups and ultrasounds, which revealed no abnormal findings. The patient denied any history of infection; HIV and VDRL tests were nonreactive.

The delivery was vaginal at 38 weeks, with Apgar scores of 8–9–9 and a birth weight of 2940 grams. Neonatal physical examination revealed an approximately 2 cm exophytic, firm, painless, smooth, pinkish mass located on the anterior maxillary gingiva. This mass interferes with feeding. (Figure 1).

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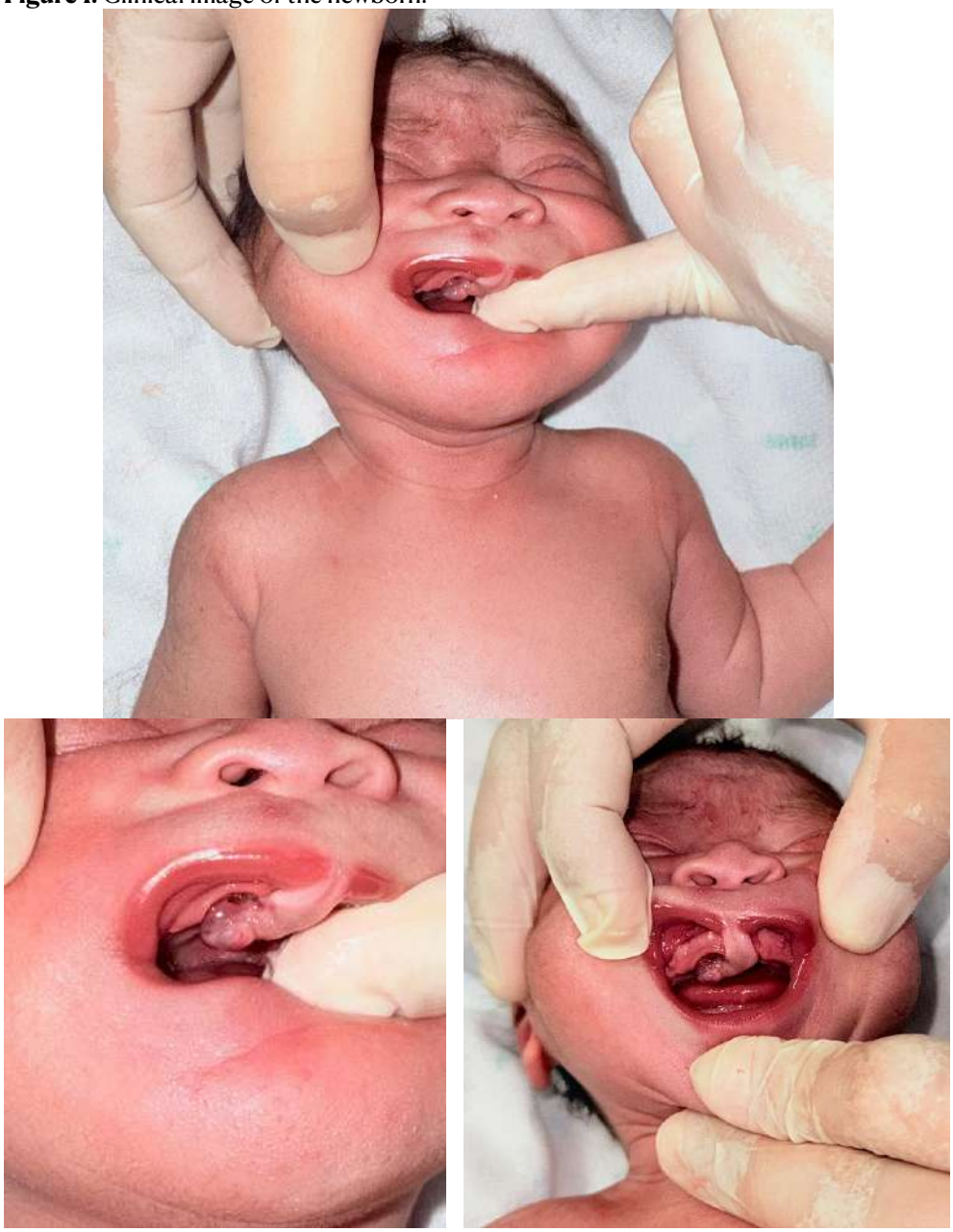
Figure 1. Clinical image of the newborn.



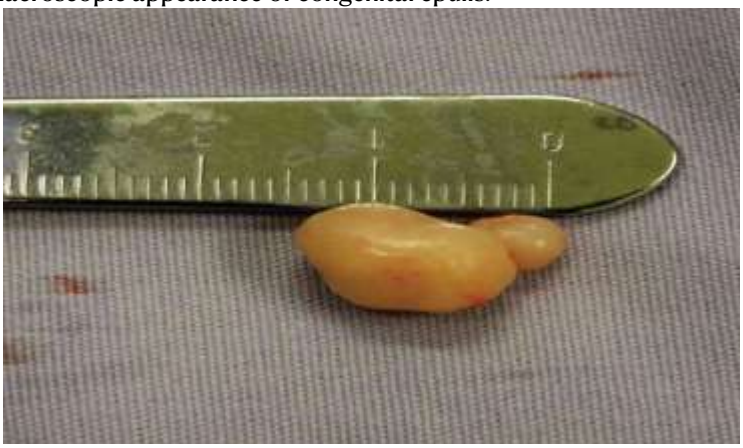
A pedunculated exophytic tumor approximately 2 cm in diameter, located on the superior anterior alveolar ridge of the neonate, with a pink, smooth, and nonulcerated surface. Characteristic of a congenital epulis.

Assessment and treatment

Pediatric surgery and pediatric dentistry evaluation were performed, and surgical resection under general anesthesia was selected (Figure 2). The procedure was successful and without complications. A histopathological study revealed granular cells with eosinophilic cytoplasm

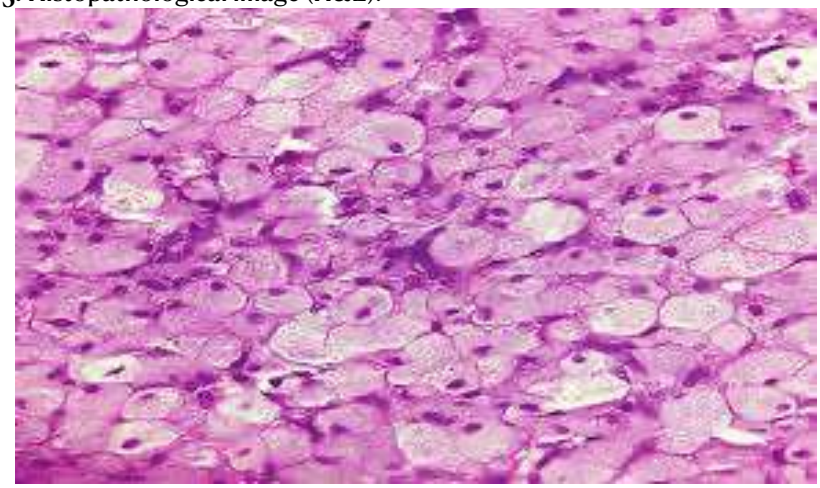
positive for vimentin and negative for S100, which is consistent with congenital epulis (Figure 3).

Figure 2. Macroscopic appearance of congenital epulis.



Macroscopic appearance of the congenital epulis after surgical resection. A firm, encapsulated mass with a narrow base of implantation is observed.

Figure 3. Histopathological image (H&E).



Photomicrograph of the tumor stained with hematoxylin and eosin (H&E 400x) showing proliferation of granular cells with eosinophilic cytoplasm and round nuclei. Absence of atypia or mitotic activity. Findings consistent with congenital epulis.

Evolution

The postoperative course was satisfactory, with proper suction and no signs of recurrence at one month of follow-up.

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Discussion

Congenital epulis is a unique lesion because of its exclusive appearance during the neonatal period, its peculiar histology, and its tendency not to recur [1, 9]. Clinically, it presents as a pedunculated or sessile mass on the anterior gingiva, with progressive intrauterine growth, detectable even by prenatal ultrasound from week 26 onward [10, 11].

The differential diagnosis includes oropharyngeal teratoma, hamartoma, lymphangioma, fibroma, and rhabdomyosarcoma [12]. Histology reveals large granular cells with eosinophilic cytoplasm, a lack of mitotic activity, and positive vimentin expression and negative S100 expression, indicating that it can be differentiated from adult granular cell tumors [13, 14].

Although some authors report spontaneous regression of the lesion [15], surgical resection is the treatment of choice when there is interference with breathing or feeding [16]. Recurrence has not been described, even in cases of incomplete resection [17]. Malignant transformation has not been observed, nor has it been associated with genetic syndromes or systemic congenital disorders [18].

Conclusion

Congenital epulis is a rare, benign condition that should be considered in newborns with intraoral masses. Timely management helps prevent nutritional or respiratory complications. Surgical resection is safe and effective, with an excellent long-term prognosis. Postoperative clinical follow-up is recommended to rule out recurrence or interference with oral development.

Abbreviations

CGCT: congenital granular cell tumor.
HIV: human immunodeficiency virus.

Supplementary information

The supplementary materials have not been provided.

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Not declared.

Authors' contributions

Ramón Miguel Vargas-Vera: Conceptualization, data curation, research, methodology, visualization, original draft writing.
Thuska Pico Mawyin: Conceptualization, data curation, research, project management, and writing of the original draft.
Ricardo Francisco Altamirano Bajaña: Conceptualization, formal analysis, software, validation, visualization, writing–review and editing.
Martha Verónica Placencia-Ibadango: Conceptualization, data curation, research, project management, and writing of the original draft.
Patricia Pinto-Torres: Conceptualization, data curation, research, project management, and writing of the original draft.
All the authors read and approved the final version of the manuscript.

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Availability of data or materials

Not applicable.

Statements

Ethics committee approval and consent to participate
Not applicable to clinical cases.

Consent for publication
Written informed consent was obtained from the patient's parents for the publication of this clinical case and associated images.

Conflicts of interest
The authors declare that they have no conflicts of interest.

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