Pyogenic Granuloma Presenting as a Congenital Epulis

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Objective: To describe a clinical approach to the differential diagnosis of oral lesions in neonates.

Design: Case report.

Setting: Academic ambulatory care center.

Participants: Male infant.

Results: A gingival mass in a male infant appeared clinically consistent with a congenital epulis. Following excision and histologic examination, the diagnosis was determined to be a pyogenic granuloma. Careful attention to alternative diagnoses led to the correct etiology.

Conclusions: Primary care pediatrics encounter neonatal oral lesions infrequently. The most common oral lesions in the newborn period are Epstein pearls and Bohn nodules. This case illustrates the importance of formulating a more extensive differential diagnosis on discovery of a neonatal oral mass.

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The oral examination is an essential part of the routine physical examination of the newborn. When a mass is found in the oral cavity, it is important to formulate a differential diagnosis since this will help guide further evaluation of the condition and management of the patient. Most of the information regarding oral lesions in the newborn is found in the dental, surgical, and pathology literature, but very little exists in the pediatric literature. This case report describes a male infant with a gingival mass presenting clinically as a congenital epulis of the newborn; however, histologically it proved to be a pyogenic granuloma.

Patient Report

A 2.7-kg 364-g male infant was born after uncomplicated normal spontaneous vaginal delivery to a 34-year-old gravida 2 para 2 Vietnamese woman. On physical examination performed shortly after delivery, he was found to have a 1- to 2-mm whitish cystic lesion over the right anterior maxillary alveolar ridge. The pregnancy had been uncomplicated. The infant’s Apgar scores were 9 and 9 at 1 and 5 minutes, respectively. At his routine newborn visit on the third day of life, the lesion had evolved into a 2 × 2-cm yellow mass. The mass changed over the course of 1 week, leaving a residual, flat, yellow lesion. Over the next week, the lesion grew, becoming fluctuant, fleshy, and pedunculated (Figure 1). The diagnosis at this time was a mucocele, and he was referred to a pediatric dentist for further evaluation. At this visit he was thought to have a Bohn nodule (a firm, yellow white mucous gland cyst) vs an Epstein pearl (a keratin-filled cystic lesion lined with stratified squamous epithelium).

At age 5 weeks, the infant was evaluated by a maxillofacial surgeon. A diagnosis of congenital epulis of the newborn was made and a period of observation was recommended. The infant continued to breastfeed well with normal growth parameters, and he had no respiratory difficulty. At 7½ months of age, because of interference with teething, the mass was excised under general anesthesia. The specimen consisted of a 1 × 0.8 × 0.5-cm, irregularly shaped, lobulated mass with a smooth and glistening surface. Microscopic examination revealed polyloid nodules covered by acanthotic, non-keratinized stratified squamous epithelium and edematous fibrous connective tissue containing prominent blood ves-
Epithelial collarette formation was present (Figure 2). Although this lesion clinically appeared to be an epulis, it was histologically most consistent with a pyogenic granuloma.

**COMMENT**

Pyogenic granuloma, or the currently preferred histologic term *lobular capillary hemangioma*, occurs during infancy, typically as a single polypoid nodule that bleeds easily on palpation. The face, lip, and oral cavity, particularly the gingiva, and umbilicus are common sites.\(^1\) It is usually painless, develops rapidly, and may range in size from a few millimeters to a few centimeters. The current thinking is that this lesion represents a benign neoplasm, a form of capillary hemangioma, rather than a reactive infectious or traumatic process.\(^2\) Pyogenic granuloma has a diagnostic, lobular arrangement of capillaries at its base. The lobules are composed of discrete clusters of endothelial cells, and the lumina vary from indistinct to prominent. The surface of the lesion may undergo secondary, nonspecific changes that include stro-
mal edema, capillary dilation, inflammation, and a granulation tissue reaction.² The presence of an epithelial colllarette, which was present in our patient (Figure 2), distinguishes the pyogenic granuloma from a capillary hemangioma.²,³ Management consists of complete surgical excision.¹,⁴ If not completely excised, the lesion eventually scleroses.

Hemangiomas are the most common soft tissue masses found in the newborn, occurring in approximately 2% of neonates and 10% of infants. In a retrospective review by Sato et al.,⁵ hemangiomas were found to be the most common pediatric benign tumors of the oral mucosa. They may appear singly or as multiple lesions, as in infantile hemangiomatosis. Some may regress spontaneously; however, others may require removal by cryosurgery, sclerosing agents, or laser.

Other oral cavity conditions to consider in the differential diagnosis are Epsteins pearls, Bohn nodules, viral enanthesm, granular cell tumors, natal teeth, hemangiomas, reparative giant cell granulomas, teratomas, gingival cysts, ranulas, and melanotic neuroectodermal tumor of infancy (Table). Trying to make a definitive diagnosis can present a challenge to the primary care pediatrician as it did in this case. Although the mass appeared clinically to be a congenital epulis (granular cell tumor), the absence of the characteristic large cells with granular cytoplasms⁶ essentially ruled out this entity. The histologic findings are most consistent with an old pyogenic granuloma.

Most oral masses encountered in the neonatal period, including teratomas, are benign except for the melanotic neuroectodermal tumor, which occasionally represents a malignant process.⁴,⁵ Although hemangiomas, including pyogenic granuloma, are the principal benign conditions of the oral mucosa in children, the most common oral lesions in the newborn period are Epstein pearls and Bohn nodules. This case illustrates the importance of a complete oral examination at the initial newborn visit as well as at subsequent office visits.

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REFERENCES