

Peripheral ossifying fibroma associated with a neonatal tooth: case report

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Peripheral ossifying fibroma (POF) is a relatively common reactive gingival growth of uncertain pathogenesis.¹ In the literature, this pathologic lesion sometimes has been described as an ossifying fibroid epulis, a peripheral fibroma with calcification or a calcifying granuloma.² In 1982, Gardner recommended that the only term used to describe this entity should be POF.³

POF are seen usually in teenagers and young adults, with an occurrence peak between the ages of 10 and 19 years.⁴ A literature review revealed the youngest reported age of a POF was in a 7-month-old infant. The purpose of this report is to present a case in a neonate.

Case report

A consultation was requested by the Nursery at Ruby Memorial Hospital of West Virginia University on a 2-hour-old, Caucasian female neonate, birth weight of 7 lbs, 5oz, gestational age of 37 weeks, who was delivered vaginally with no complications. The otherwise healthy neonate was said to have a small cyst-like mass in the anterior mandibular ridge area, approximately 20 x 12 x 6 mm. Clinical examination revealed a soft, fluid-filled, pink fluctuant mass. The clinical differential diagnosis was that of a gingival cyst of newborn or an eruption cyst (Fig 1). The infant was seen at the dental clinic a week later with a neonatal tooth erupting through the site of the cyst. Radiographic examination



Fig 1. Gingival cyst in newborn.

was not attempted as the parents did not want the baby to be exposed to any radiation. Clinical examination revealed that the neonatal tooth had third degree mobility and was causing a lot of discomfort to the mother during nursing. It was decided to extract the tooth at 1 week of age. The extracted tooth had

only approximately half of the crown formed. The child was seen for a 1-week post-op check-up during which time it was noted that the extraction site was covered by a mass that was 8 x 4 x 4 mm. A pathology consultation was requested and the lesion was clinically diagnosed as a pyogenic granuloma. Reevaluation was recommended and if there was no reduction in size, the lesion was to be surgically excised. The mass was excised in the dental clinic at 4 weeks of age using local anesthesia. Histologic examination of the excised

mass revealed a lesion consisting primarily of granulation tissue with an ulcerated surface. Also noted was an eosinophilic material in the connective tissue exhibiting osteiod appearance (Fig 2) a

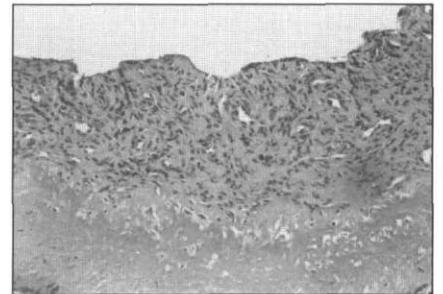


Fig 2. Histology of granulation tissue with an ulcerated surface.

final diagnosis of a POF was rendered. The child was followed for 2 weeks after the excision, during which time the alveolar mucosa healed uneventfully.

Discussion

The clinical features of a POF were described by Buchner and Hansen, and consisted of a localized growth on the gingiva with a pedunculated or sessile base.¹ POFs usually range in color from pink to red and commonly occur on the interdental papilla. It is impossible to identify the cause of growth in most cases, but a multitude of possible irritants have been identified including calculus, plaque, microorganisms, dental appliances, and ill-fitting crowns.^{5,6} The POF is a reactive lesion of soft tissue in contact with osseous structures and is only seen in soft tissues over bone. POFs differ from a clinically similar lesion, the peripheral odontogenic fibroma, in that they lack the odontogenic components found in this latter lesion. While ossification may occur in soft tissues associated

with bone, they are generally considered to be either a choristomas, such as an osteoma of the tongue, or an osseous metaplasia, such as bone or cartilage seen in some salivary gland tumors. While POF occurrence is uncommon in the neonate, it is not difficult to rationalize that the active growth of the alveolar bone in the neonate jaw, when stimulated by removal of the neonatal tooth, might respond with an exuberant periosteal response and form a reactive lesion with some potential for bone production. The lesions usually range in size from 0.1 to 1.0 cm.⁵ POF duration has been reported by Buchner and Hansen as two weeks to 20 years, with a mean of 11.5 months.¹ Bhaskar and Jacoway reported that the average duration of the lesion was 18.6 months.⁷

According to Bodner and Dayan, POFs can occur at any age, but rarely occur before age 10 and are most common in the second decade of life.^{4,5} Buchner and Hansen reported an age range of 7 to 90 years with a mean of 30 years.¹ Kenney reports incidence between 5 and 25 years with incidence decreasing each decade.⁴ Bhaskar and Jacoway reported a 64% predilection for occurrence of the lesion in females, which was very similar to the 63% reported by Buchner and Hansen.^{1,7}

According to Buchner and Hansen, POFs occurred 60% of the time in the maxilla and 40% in the mandible, and 54% occurred in the incisor/cuspid region.¹ Kenney et al. reported that occurrence was equal in the maxilla and the mandible, with 80% of the lesions developing in the anterior region.⁴

Histologically, POFs are a nonencapsulated mass of a cellular fibroblastic connective tissue covered by stratified squamous epithelium. There exists a wide histomorphologic spectrum for this entity, which can make it difficult to distinguish this from other lesions. In its early stages, the lesion may be ulcerated and composed of cellular, fibroblastic tissue with granular foci of dystrophic mineralization. Buchner and Hansen state that at this early stage some lesions have been clinically diagnosed as a pyogenic granuloma.¹ This lesion often appears ulcerated at first and is characterized by a highly cellular fibroblastic connective tissue with areas of dystrophic calcification and osteogenesis. As the ulcer heals, the dystrophic calcification matures into bone and the cellular fibroblastic connective tissue matures to give the appearance of a fibrous epulis.¹

According to Michaelides, peripheral odontogenic fibroma must be histologically differentiated from POF.⁸ The main histological difference is the presence of odontogenic epithelium in peripheral odontogenic fibroma.

The recommended treatment of POF is a local surgical excision that extends to include the periosteum with submission for histomorphologic examination.⁹ Inclusion of the periosteum during the excision decreases the recurrence of this lesion.¹ Kenney et al. reported a 14% recurrence rate of POF. When taking into account the reactive nature of this lesion, this rate may reflect incomplete initial removal or repeated injury.⁴ Buchner and Hansen reported a recurrence of 16%, Levin and North reported a recurrence of 10–20%, and Bhaskar and Jacoway reported recurrence of 8%.^{1,7,10}

In summary, POF is an entity that can be seen in neonates. Therefore, it may be necessary to include POF in the differential diagnosis of anterior alveolar masses in the neonate. The presence of POF can be very overwhelming to a new mother and it becomes imperative to educate new parents of the recurrence rate associated with POF. It also is advisable to biopsy the mass when excised to help arrive at the appropriate diagnosis.

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