



¹ Student Dentist, Stony Brook School of Dental Medicine

² Clinical Assistant Professor, Department of Oral & Maxillofacial Surgery, Stony Brook School of Dental Medicine

³ Clinical Associate Professor, Department of Orthodontics & Pediatric Dentistry, Stony Brook School of Dental Medicine

INTRODUCTION

Peripheral odontogenic fibroma (POdF) is a rare, benign, soft tissue tumor of odontogenic origin.¹ Most commonly affecting individuals between the second and fourth decades of life with a predilection for females.² POdF presents exclusively on the gingiva as a fixed, firm mass either pink or red in color, typically in the anterior mandible (Figure 1). Radiographic findings include internal calcifications or superficial cuffing of the alveolar bone, although these findings are not present in all cases.³ Clinically POdF cannot be differentiated from other gingival lesions including peripheral ossifying fibroma, pyogenic granuloma, and peripheral giant cell granuloma, known as the “three P’s.”⁴ A definitive diagnosis is made upon histological examination of a biopsied sample.¹ Surgical excision remains the standard treatment and long-term follow-up is strongly recommended due to a recurrence rate of approximately 50%.² Although reportedly uncommon, 23.2% of reported cases occur in the pediatric population (Table 1).¹ Herein, we report a case of POdF in a pediatric patient.

FIGURE 1: CLINICAL PRESENTATIONS



Clinical presentation of POdF in a 29-year-old female⁵



Clinical presentation of POdF in a 3.9-year-old female⁶

CASE PRESENTATION

An 8-year-old male was referred by a private practice pediatric dentist to a private oral surgery practice in 2021 for delayed eruption of tooth #3. Medical history indicated that the patient was prescribed methylphenidate for ADHD and has no known allergies. Clinical examination revealed hyperplastic tissue on the right posterior maxillary attached gingiva approximating unerupted tooth #3. There were no ulcerations, erythema, or purulence. Radiographic findings obtained in 2025 revealed at least 75% of root development of unerupted #3 (Figure 2). Contralateral tooth #14 was erupted and in full Class I intercuspation. In 2021, an incisional biopsy was performed under general anesthesia due to the patient’s ADHD and extreme dental anxiety.

Histopathologic evaluation by an oral pathologist revealed dense fibrous connective tissue with scattered islands of inactive odontogenic epithelium within a fibromyxoid stroma (Figure 3). The overall histologic features were determined to be consistent with peripheral odontogenic fibroma.

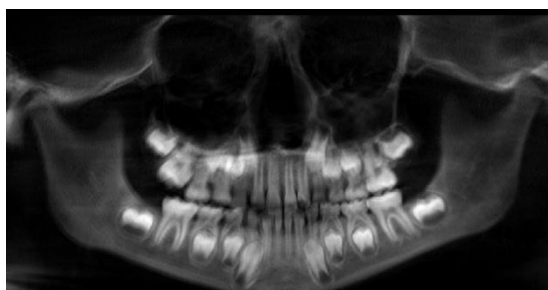
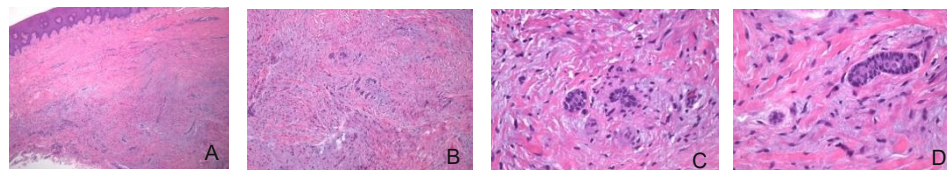


Figure 2: Panoramic radiograph obtained 06/23/2025. Reported patient in mixed dentition with unerupted #3 while other permanent first molars are fully erupted

FIGURE 3: HISTOPATHOLOGY



A. 4x: Low-power view of a gingival mass that is composed of dense fibrous connective tissue and inactive odontogenic epithelium. B. 10x: Scattered islands of inactive odontogenic epithelium against a fibromyxoid background. C and D. 40x: High-power view of islands of inactive odontogenic epithelium.

TABLE 1: LITERATURE REVIEW

Case Study	Age	Gender	Location
Martelli et al. ⁷	4 mo	Female	Maxilla
Katano et al. ⁸	2	Male	Mandibular incisor
Sugano et al. ⁹	3	Male	Mandibular deciduous molar
Weber et al. ¹⁰	3	Male	Diffuse through both maxilla and mandible
Ferraresso et al. ¹¹	6	Male	Mandibular incisor
Kawano et al. ¹²	7	Female	Maxillary molar
Alaeddini et al. ¹³	8	Male	Mandible
Weber et al. ¹⁰	8	Female	Diffuse through both maxilla and mandible
Alaeddini et al. ¹³	9	Male	Mandible
Costa et al. ¹	10	Female	Mandibular incisor
Alaeddini et al. ¹³	12	Male	Mandible
Khot et al. ¹⁴	14	Male	Maxillary incisor
Alaeddini et al. ¹³	15	Female	Mandible
Yamashiro et al. ¹⁵	15	Female	Mandibular premolar

TABLE 2: DIFFERENTIAL DIAGNOSIS

	Peripheral Odontogenic Fibroma	Peripheral Ossifying Fibroma	Pyogenic Granuloma	Peripheral Giant Cell Granuloma
Location	Anterior mandible	Anterior maxilla interdental papilla	Anterior maxilla	Anterior mandible
Color	Pink or red	Range from pale pink to dark red	Red to reddish-purple	Red to bluish-purple
Gender Predilection	Female	Female	Female	Female
Age of Peak Incidence	2 nd -4 th decade	2 nd decade	2 nd -3 rd decade	5 th -6 th decade
Radiographic Presentation	Cuffing of alveolar bone Calcifications	Calcifications	N/A	Superficial destruction or resorption of underlying bone
Histopathology	Scattered islands of inactive odontogenic epithelium within fibromyxoid connective tissue	Spindle-shaped fibroblasts with bone, cementum-like material, and dystrophic calcifications	Heavily vascularized core of fibrous connective tissue	Presence of spindle-shaped fibroblasts, multinucleated giant cells, capillaries, and extravasated red blood cells

DISCUSSION

Reviewed literature was limited to case study reports available on databases accessible via Stony Brook University Library Services. Most pediatric case studies reported POdF occurs in the anterior mandible.^{1,8,11} Most cases associated the lesion with erupted permanent teeth, while three were associated with deciduous teeth.^{8,9,10} One case involved the edentulous anterior mandible of a child without permanent successors.¹¹ One report described radiolucency of the alveolar bone at the lesion site accompanied by ‘sandy calcifications.’⁴⁵

In contrast, the case presented here involves a POdF lesion located in the posterior maxilla. One other case in this location has been reported in the literature.¹² No radiographic pathology was detected using conventional imaging. CBCT obtained June 2025 demonstrated approximately 75% root development of unerupted #3 and delayed development of the right maxillary posterior permanent dentition compared to the contralateral side.

Traditionally, gingival lesions are approached through a differential diagnosis that includes the “three P’s”: Pyogenic Granuloma, Peripheral Giant Cell Granuloma, and Peripheral Ossifying Fibroma.⁴ A comparison of the three P’s and Peripheral Odontogenic Fibroma is in **Table 2**.

Both general practitioners and pediatric dentists routinely evaluate pediatric patients, thus it is important to recognize that the occurrence of POdF in children represents nearly one-quarter of reported cases in the literature. This contrasts highlights an important limitation of the current “three P’s” diagnostic paradigm: while it remains a useful framework for forming differential diagnoses of gingival lesions, it may inadequately account for presentations within the pediatric population. Consequently, clinicians should exercise caution in relying heavily on age-based expectations when evaluating gingival growths in children. This reinforces the need for a broader diagnostic perspective that considers variations in age distribution and avoids prematurely excluding certain diagnoses based solely on patient demographics.

If left untreated, POdF may result in external tooth resorption in the coronal and cervical regions, tooth displacement, and compressive resorption of the surrounding alveolar bone. Potential consequences include alterations in speech, esthetics, and mastication.

In this case, the lesion extended from the right maxillary tuberosity to the distal aspect of the primary maxillary right canine, involving both the buccal and palatal aspects of the alveolar ridge. Due to the extent of involvement, the oral surgeon elected to monitor the lesion rather than perform complete surgical excision. The lesion has remained stable since the initial incisional biopsy performed in 2021. Continued surveillance was recommended including one year follow-up with oral surgeon and six-month recall visits with the pediatric dentist.

CONCLUSIONS

POdF is a rare benign odontogenic tumor, sharing many clinical characteristics with other nodular gingival lesions. Biopsy and proper histologic evaluation are imperative to reach an accurate diagnosis. This case highlights a rare diagnosis of POdF in a male pediatric patient and supports raised awareness of POdF diagnosis within the pediatric population. The purpose of this case report is to highlight a need for divergence from the classic “three P’s” paradigm, emphasize the need to re-examine conventional assumptions, and expand clinical awareness when assessing gingival lesions in pediatric patients—suggesting a fourth “P” in pediatric oral pathologic diagnosis.

REFERENCES

