Unerupted Mandibular Second Primary Molar With an Unusual Histopathological **Finding: A Case Report**

Leah M. Walker, DDS A. Jeffrey Wood, DDS Alex McDonald, PhD, DDS William Carpenter, DDS, MS

ABSTRACT

This is the case of a healthy 6-year old female with a clinically absent right mandibular second primary molar with no history of that tooth ever being present. Radiographic examination revealed a well-circumscribed pericoronal radiolucency surrounding the mandibular right primary second molar. The mandibular right second premolar was displaced mesially. Treatment consisted of enucleation of the lesion with removal of both the unerupted primary second molar and second premolar. The histopathology of the excised lesion revealed a hyperplastic dental follicle with a focal proliferation of odontogenic epithelium and duct-like structures, probably representing an incipient adenomatoid odontogenic tumor. (J Dent Child. 2004;71:77-79)

KEYWORDS: PRIMARY MOLAR, JAW CYSTS, MANDIBLE TUMOR

ruption has been defined as the movement of a tooth from its developmental position within the jaw to-✓ward its functional occlusal position.¹ Eruption takes place in several stages: the preeruptive alveolar bone stage; alveolar bone stage; mucosal stage; preocclusal stage; occlusal stage; maturation stage with and without attrition; and the maturation stage with loss of an antagonist. Disturbances during eruption may occur in any of these stages. There are 2 main causes of eruption disturbances: ectopic position of the tooth germ and obstacles to the eruption path.²

Clinicians often encounter pediatric patients with unerupted or clinically absent teeth. Common obstacles to eruption include cysts, tumors, or other ectopically erupting teeth. The incidence of unerupted or impacted primary teeth is lower than permanent teeth.³⁻⁶ Of the primary teeth reported as unerupted or impacted, mandibular second primary molars have the highest incidence.7,8

CASE REPORT

A 6-year old female patient presented to the pediatric clinic at the University of the Pacific School of Dentistry with the chief complaint of a missing mandibular right primary second molar (#T). No evidence of systemic disease or trauma was reported. Extraoral and intraoral clinical examination revealed age appropriate dental development with the exception of the clinically missing mandibular right second primary molar. Evaluation revealed no evidence of soft tissue swelling or displacement of the surrounding dentition (Figure 1).

A panoramic radiograph revealed normal dental development for a 6-year old female with the exception of tooth T and the mandibular right second premolar (#29) (Figure 2). Tooth T was inferiorly positioned within the mandible with root apices in close proximity to the inferior border of the mandible. The premolar (#29) was positioned superiorly and mesially to the coronal portion of tooth T. A well-circumscribed, radiolucent lesion surrounded both the coronal portions of tooth T and tooth 29. The radiolucency was observed to be enlarging when compared to previous records.

Differential diagnosis of the radiolucent lesion associated with the unerupted teeth included hyperplastic dental follicle, dentigerous cyst, ameloblastic fibroma, adenomatoid odontogenic tumor, odontogenic keratocyst, unicystic ameloblastoma, and odontogenic fibroma. Based on this information, the patient had an excisional biopsy of the lesion

Dr. Walker is in general practice in Newport Calif, at the time of the study she was a senior dental student; Dr. Wood is chairman of the Department of Pediatric Dentistry; Dr. McDonald is associate professor, Department of Oral and Maxillofacial Surgery; Dr. Carpenter is chairman, Department of Pathology and Medicine, University of the Pacific School of Dentistry, San Francisco, Calif. Correspond with Dr. Wood at jwood@pacific.edu

and removal of both teeth under general anesthesia with full thickness muco-gingival flap and a buccal window in the bone overlying the unerupted teeth. The neurovascular bundle was visualized and appeared to be intact.

The gross specimen consisted of a white, tan, soft, nodular mass measuring 1.5 cm in diameter (Figure 3). Histopathology revealed the specimen to be composed of a well-circumscribed fibrous connective tissue, which varied from lightly to heavily



Figure 1. Right mandibular alveolar ridge: Note unremarkable area of unerupted mandibular right second primary molar.

collagenized areas with a hypocellular fibroblastic proliferation and moderate vascularity. Several duct-like structures, lined by cuboidal to columnar epithelium, representing reduced enamel epithelium were noted. In close proximity, accounting for about 20% of the specimen, were other ductlike epithelial structures and several spindle-shaped epithelial islands associated with several foci of irregular calcifications (Figure 4). The duct-like structures represented microcysts and were lined by columnar cells with the nuclei polarized away from the lumen with a thin layer of an eosinophilic material outlining the lumen. Surrounding these columnar cells was a thin layer of spindled epithelial cells. The diagnosis was hyperplastic dental follicle with an incipient adenomatoid odontogenic tumor.

Postoperative treatment was limited to observation. Orthodontic space maintenance was not of concern. Orthodontic evaluation estimated moderate to severe crowding in the adult dentition, probably requiring 4-bicuspid extraction as part of



Figure 3. Gross surgical specimen.



Figure 4. Photomicrograph of surgical specimen: Note spindle–shaped epithelial islands with areas of irregular calcifications.

orthodontic treatment. Space maintenance after surgery was not planned since mesial drift of the mandibular permanent first molar (#30) would be accounted for in subsequent orthodontic treatment.



Figure 2. Panoramic radiograph: Note unerupted mandibular right second primary molar, mandibular right second premolar, and associated radiolucency.

DISCUSSION

This was an unusual presentation of an unerupted primary molar. The histopathologic finding of an incipient adenomatoid odontogenic tumor in this follicle was also unusual and the exact etiologic factor responsible for the clinical impaction could only be theorized.

The procedure in this case was performed by an oral and maxillofacial surgeon under general anesthesia in a hospital setting due to the patient's age and potential surgical complications. These surgical complications included fracture of the mandible, trauma to the inferior alveolar nerve, and risk associated with general anesthesia. Based upon the age of the patient and the fact that the integrity of the mandible was maintained, bone grafting was not planned.

Recurrence of a lesion of this type was not expected.⁹ The patient should be followed for normal eruption and development of the remaining teeth, as well as management of her future orthodontic needs.

REFERENCES

- 1. TenCate AR. Oral Histology: Development, Structure and Function. 4th ed. St. Louis: CV Mosby; 1989.
- Andreasen JO. Textbook and Color Atlas of Tooth Impactions—Diagnosis, Treatment and Prevention. St. Louis: CV Mosby; 1997.

- 3. Pinborg JJ. *Pathology of Dental Hard Tissues*. Philadelphia: WB Saunders Co; 1970:241.
- 4. Kramer RM, Williams AC. The incidence of impacted teeth. *J Oral Surg.* 1970;29:237-241.
- 5. Shah RM, Boyd, MA. A rare case of multiple tooth impaction. J Can Dent Assoc. 1979;45:287-296.
- 6. Broadway R. The problem of unerupted and impacted teeth. *Dent Update.* 1976;3:273-283.
- 7. Amir ED, Donald F. Unerupted second primary molar. *J Dent Child.* 1982;49:365-368.
- Aso H, et al. A case of an impacted lower left second deciduous molar. *Fukuoka Shika Daigaku Gakkai Zasshi*. 1983;9:771-779.
- Regezi JA, Sciubba JJ, Jordan RCK. Oral Pathology— Clinical Pathologic Correlations. St Louis: WB Saunders Co; 2003.

Copyright of Journal of Dentistry for Children is the property of American Society of Dentistry for Children and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use. Copyright of Journal of Dentistry for Children is the property of American Academy of Pediatric Dentistry and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.