Impaction of a primary maxillary canine by an odontoma: surgical and orthodontic management

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Introduction

Impaction of an anterior primary tooth is rare, and most often is associated with the presence of a supernumerary tooth or odontoma (Axel 1937; Amies 1947; Amies 1952; Hitchin and White 1955; Hitchin 1962; Hitchin and Dekonor 1963; Noonan 1971). Although cases of impacted mandibular and maxillary incisors have been reported (Troxler 1973; Yokoyama 1973), most cases involve the maxillary canine (Axel 1937; Hitchin and White 1955; Hitchin 1962; Hitchin and Dekonor 1963; Noonan 1971). Most reports focus on the radiographic or histologic diagnosis of the anomaly; few discuss the orthodontic implications (Axel 1937; Hitchin and White 1955; Hitchin 1962; Hitchin and Dekonor 1963; Noonan 1971). This case report follows the occurrence of this uncommon condition and the surgical and orthodontic management.

Case Report

A 48-month-old Caucasian male presented with an unerupted maxillary right primary canine. Clinical examination revealed a mesial step occlusion, adequate arch length, and normal relationships in the vertical and transverse dimensions. Radiographic examination revealed the presence of the unerupted primary canine and an age-appropriate complement of developing permanent teeth (Fig 1).

The patient was placed under local anesthesia, and an incision was made over the edentulous ridge from the distal of the right central incisor to the mesial of the second molar. A full thickness mucoperiosteal flap was reflected labially and the overlying alveolar bone was removed to expose the crown of the canine. A small (3.0 by 1.5 mm) odontoma was located lingual to the canine crown and removed with a periosteal elevator (Fig 2, see next page). After removing the odontoma, the option of closing the surgical site and allowing spontaneous eruption of the primary canine was considered. Noonan (1971) observed the eruption of a maxillary right primary canine after an odontoma was removed from a 5-year-old girl. Hitchin (1962) suggested that spontaneous eruption may not occur if the root of the impacted tooth is completed. Failure to erupt would require a second surgical exposure to place an orth-

Discussion

An impacted primary tooth is uncommon, and usually is associated with a supernumerary tooth or odontoma. The small size of the odontoma made it difficult to identify on radiographs, even though its presence was suspected. Following removal of the odontoma, closing the incision and allowing the primary canine to erupt spontaneously was considered. Noonan (1971) observed the eruption of a maxillary right primary canine after an odontoma was removed from a 5-year-old girl. Hitchin (1962) suggested that spontaneous eruption may not occur if the root of the impacted tooth is completed. Failure to erupt would require a second surgical exposure to place an orth-

Fig 1. Intraoral photographs showing uneruption of maxillary right primary canine in an otherwise normal occlusion.
odontic attachment on the canine. Our patient was younger than the child reported by Noonan, but radiographic examination showed the root apex to be close to completion. The orthodontic therapy was brief and the result was excellent.

Fig 2. Periapical radiograph showing presence of unerupted primary canine with odontoma (arrow).

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Fig 3. Erupted primary canine three months after initiation of treatment.