

## Surgical treatment of an unerupted supernumerary tooth attached to an unerupted permanent incisor

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### Abstract

*An unerupted supernumerary tooth was attached to the root surface of an unerupted permanent lateral incisor. It was necessary to remove both the supernumerary and the permanent lateral incisor as a single unit. The permanent lateral incisor was separated from the supernumerary and placed back into the original developmental crypt. The replanted lateral incisor erupted normally one year later.*

While quite rare in primary dentition, supernumerary teeth occur with relative frequency in permanent dentition.<sup>1</sup> The most common site of occurrence is the maxillary anterior region.<sup>1</sup> Supernumerary teeth occur in about 1 in every 100 persons and eight times more frequently in the maxilla as the mandible.<sup>2,3</sup>

Supernumerary teeth can resemble normal teeth, be conical or tuberculate in shape, or bear no resemblance to any normal tooth form.<sup>2,4</sup> Supernumerary teeth are usually smaller than normal surrounding teeth, but supernumerary premolars and mandibular incisors are more often equal in size. Supernumerary maxillary lateral incisors often resemble the normal lateral incisors in form, although rarely in size. A supernumerary tooth which resembles the adjacent permanent tooth in shape is sometimes referred to as a supplemental tooth.<sup>4,5</sup>

Supernumerary teeth are thought to be formed by redundancy of tooth bud initiation by the dental lamina. A hereditary predisposition to supernumerary teeth is noted and may contribute to the etiology in a small number of cases.<sup>6,7</sup> Supernumerary teeth have been related to an atavistic tendency, or a reversion to some ancestral pattern, but this etiology is questionable for the majority of supernumerary teeth.<sup>8</sup> Supernumerary tooth formation also may be a twinning or dichotomy of the tooth bud.<sup>9</sup>

Supernumerary teeth are sometimes found with developmental disturbances such as cleidocranial dysostosis.<sup>10,11</sup> An increased incidence also is seen in cleft palate.<sup>12</sup> Gardner's syndrome is a disease with multiple impacted supernumerary teeth and a multiplicity of osteoid, epidermoid, and intestinal manifestations.<sup>13</sup>

Supernumerary teeth can delay the eruption of proximate permanent teeth, cause a diastema, cause gross and rotational malpositions of teeth, cause root resorption of adjacent teeth, or lead to the development of dentigerous cysts or primordial cysts.<sup>1</sup> Eruption of the supernumerary tooth into the nasal cavity is rare.<sup>4</sup>

### Case Report

A four-year-old Caucasian female was referred for restorative treatment. The patient's medical history was noncontributory and there was no history of any facial trauma. A maxillary anterior radiograph showed two supernumerary teeth mesial to the developing permanent lateral incisors. No treatment was recommended at that time for the two supernumerary teeth and the parent was advised about timing and probable need for later surgical removal. The patient received necessary preventive and restorative treatment.

Three years later during routine periodic examination, it was noted that the permanent maxillary central incisors were fully erupted, but the permanent maxillary lateral incisors were not. Radiographic examination suggested that the supernumerary teeth were preventing eruption of the permanent lateral incisors (Figure 1); surgical removal of the supernumerary teeth was indicated.



**Figure 1.** Radiograph showing the presence of two supernumerary teeth developing mesially to the two unerupted permanent maxillary lateral incisors.



**Figure 2.** One-year postoperative radiographs showing the eruption of the replanted right permanent lateral incisor.



**Figure 3.** Fully erupted replanted right permanent lateral incisor shown three years following surgery.

Labial and palatal local anesthesia was obtained and both maxillary primary canines were removed to improve surgical access. An incision was made along the alveolar crest from the left primary canine socket to the right primary canine socket. A labial full-thickness flap was reflected and the left supernumerary tooth exposed and removed. The right supernumerary tooth and the right permanent lateral incisor were exposed, but could not be separated due to their attachment along the root surfaces.

The two teeth were removed as a unit. The supernumerary tooth was separated from the permanent lateral incisor using a straight elevator and a mallet on a firm, sterile surface. Immediately following the separation, the permanent lateral incisor was replaced in its original developmental crypt. The surgical site was closed using silk sutures. One week later the sutures were removed and healing progressed uneventfully.

Six months after surgery, the left permanent lateral incisor erupted. One year after surgery, the replanted right permanent lateral incisor erupted (Figure 2). Evi-

dence of calcific degeneration of the pulp was noted on radiographs at this visit, but pulp testing verified vitality.

Two years after surgery, alignment of the right permanent lateral incisor to create more space distally for eruption of the right permanent canine was accomplished using a removable appliance.

Three years after surgery, the right permanent lateral incisor was fully erupted. It was in good position, vital, and had a fully mature root apex (Figure 3). The calcific degeneration noted earlier had not progressed.

## Discussion and Conclusion

Impacted supernumerary teeth in the anterior portion of the maxilla are removed ideally upon apical maturation of the incisors. Early removal may be indicated if the supernumerary tooth impedes the normal eruption of the permanent incisors, undergoes cystic degeneration, or erupts into the nasal cavity.

An important consideration when contemplating the surgical removal of a supernumerary tooth is whether or not it is attached to another tooth. In the case described, the treatment resulted in the retention of both permanent lateral incisors. If treatment had been delayed until complete apical maturation, the prognosis for retention of the intentionally extracted and replaced permanent incisor may not have been as favorable.

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