# Impaction of Mandibular Molar by Supernumerary Tooth: Case Report

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#### ABSTRACT

The occurrence of supernumerary teeth in the lower molar region is rare. A prevalence of less than 2% of cases occurring in this region has been estimated. The aim of this study was to present a clinical case of a 7-year-old female patient who had a supernumerary tubercular tooth between the distal root of the primary mandibular left second molar and the impacted permanent mandibular left first molar. Treatment consisted of surgical removal of the supernumerary tooth and case follow-up until the permanent molar's eruption, which occurred in 13 months. This study emphasizes the importance of: early diagnosis, appropriate intervention, and recommended preservation. Thus, it is possible to prevent or reduce complications, simplifying the case outcome. (J Dent Child 2008;75:181-4)

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Diagnosis and treatment of dental anomalies in pediatric dentistry are paramount. These anomalies happen after alteration in the dental development physiological process which results in anomalies of: number, form, size, structure or radicular malformation.<sup>1,2</sup>

Supernumerary teeth can be seen in almost any region of the dental arch and may be single, multiple, unilateral, or bilateral and erupted or unerupted.<sup>3</sup> The etiology of supernumerary tooth has not been defined yet. It is believed, however, that genetic and local factors are associated with its determination.<sup>3-5</sup> Currently, more than 20 syndromes and development anomalies have been associated with supernumerary teeth.<sup>3,5,6</sup>

The prevalence of supernumerary teeth found in the literature ranges from approximately less than 1% to over 6% in different populations. The permanent dentition is affected approximately twice more than in the primary, and are affected approximately twice as often more than females.<sup>37</sup>

It is observed that approximately 80% to 90% of supernumerary teeth occur in the superior arch.<sup>8,9</sup>Approximately 70% of supernumerary teeth are the anterior maxilla.<sup>10</sup> Acikgoz et al,<sup>11</sup> studying the prevalence of multiple supernumerary teeth, however, found a higher prevalence of supernumerary teeth in the region of mandibular premolars, followed by the anterior region. They did not find any case in the molar region, which disagrees with the majority of the studies found in literature.<sup>4,10</sup>

The occurrence of supernumerary teeth in the region of mandibular molars is less frequent than in the region of maxillary molars.<sup>10</sup> When it is present and is not diagnosed early, it can present problems to the patient. Sian<sup>12</sup> reported a case of root resorption and a consequent loss of the permanent mandibular first molar caused by a supernumerary tooth in this region. Nunes et al<sup>13</sup> presented a case of fusion of the supernumerary tooth with a mandibular molar, which demanded endodontic treatment to maintain both teeth.

In the permanent dentition, 77% to 92% of the supernumerary teeth are restrained, generally influenced by the axial inclination.<sup>8,14</sup> The importance of early diagnosis of a supernumerary is related to the complications associated with it, such as: disturbance of eruption, occlusal problems, pathological problems, and esthetic problems.<sup>3,5</sup>

Radiographic examination is required to diagnose impacted supernumerary teeth, their position, their relation to the adjacent tooth, and the distance of the impacted permanent tooth to the occlusal plan. In many situations, a computerized scan is used because it supplies excellent details of the morphology and proximity to the anatomical structures.<sup>15</sup>

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Treatment of a supernumerary tooth case will depend on: its type and position, its possible effect on dentition, and the child's psychological conditioning.<sup>5</sup> According to Hattab et al,<sup>3</sup> the treatments considered for patients with supernumerary teeth are: clinical and radiographic follow-up, or immediate or mediate extraction of the supernumerary tooth.

Supernumerary extraction is indicated when no complication is diagnosed, aiming for a more favorable prognostic.<sup>6,16</sup> Cozza et al<sup>17</sup> emphasizes the importance of removing supernumerary teeth to eliminate the cause of a possible delayed eruption of the permanent dentition. The surgical removal can either be carried out immediately after diagnosis or be delayed until the complete root development of the adjacent permanent tooth.<sup>3</sup> The choice of surgical technique depends on the location of the supernumerary teeth and on the child adaptation.

The majority of impacted teeth spontaneously erupts after supernumerary removal in a period that varies between 16 months and 3 years, depending on the type of supernumerary tooth, degree of displacement or inclination of the impacted tooth, available space in the arches, and period of the diagnosis and surgical intervention.<sup>3,16,18,19</sup> When spontaneous eruption does not occur, surgical exposition and orthodontic traction might be necessary.

The aim of this study was to report a case of a permanent mandibular first molar impaction in a 7-year-old child, due to the presence of a supernumerary tooth in this region.



Figure 1. Mandibular arch with clinical absence of the permanent left first molar.



Figure 2. Periapical X ray of the region showing A permanent mandibular left first molar restrained.



Figure 3. Clark technique to find the lingual position of the supernumerary.

### **CASE REPORT**

The patient, a 7-year-old female referred to the School of Dentistry Pediatric Clinics of the Lutheran University of Brazil (ULBRA), Canoas, RG, Brazil, complaining of delay in the eruption of the permanent mandibular left first molar (Figure 1).

A physical exam showed the other permanent first molars, which had already erupted approximately 1 year ago, according to the patient's mother.

Radiographic examination revealed a supernumerary tooth in the region of the permanent mandibular left first molar (Figure 2). Therefore, another periapical radiograph was taken using the Clark technique (Figure 3), as well as an occlusal incidence (figure 4), to evaluate the position of the supernumerary tooth. After radiographic diagnosis, it was concluded that the supernumerary tooth was situated lingually to the permanent first molar.



Figure 4. Occlusal incidence to confirm the lingual position of the supernumerary tooth (arrow).



Figure 5. Panoramic X ray confirming the diagnosis of a supernumerary tooth to unilateral tubercular enclosed (in prominence) causing the retention of the permanent mandibular left first molar.

Therefore, the diagnosis was of a supernumerary tooth causing retention of the permanent mandibular left first molar, with indication of surgical removal. A panoramic X ray was then requested (Figure 5) to better plan the surgical intervention.

The surgical intervention began with operatory field antisepsis application of a topical anesthetic, blockade regional anesthetic of the inferior alveolar and lingual nerves added to a transpapilar anesthesia in the mesial papillae of the primary second molar. An intrasulcular incision was made from the lingual to the mesial of the primary second molar with a distal extension to enclose the region of the supernumerary tooth and the permanent molar. The soft tissue was then diverted and an osteotomy using chisel was manually applied until visualizing the restrained supernumerary tooth, which was set free and avulsed with the aid of dental elevators. The region was curetted, irrigated with physiological serum, and sutured with isolated points.

The surgery was well tolerated by the patient, who collaborated during the entire procedure. Finally, an analgesic was prescribed (paracetamol) and postoperative instructions were given concerning the anesthesia, bleeding, oral hygiene, and feeding. The extracted supernumerary tooth could be classified as rudimentary, being in tubercle form, and having with little root development (Figure 6).

The patient returned after 7 days for a control visit and suture removal. Radiographic re-evaluation 30 days after the surgical procedure still showed a slight displacement of the tooth in the occlusal direction (Figure 7).

Spontaneous eruption occurred after 13 months, at which time it was possible to clinically observe the mesial cusp of the permanent mandibular left first molar (Figure 8). No additional intervention was necessary, and the case is periodically followed- up.



Figure 6. Supernumerary extracted, of diminished size and without complete root formation.



Figure 7. Periapical X ray 1 month after the surgery.



Figure 8. Beginning of the eruption of the first permanent molar, 13 months after the removal of the supernumerary.

#### DISCUSSION

Supernumerary teeth represent an anomaly of development where 1 or more extra teeth are formed beyond the expected normal series. If diagnosed early, it is possible to prevent or minimize innumerable occlusal, pathological and esthetic complications associated with the presence of these teeth. For diagnostic purposes, after physical examination, the radiographic examination is essential and, in some cases, the computerized scan is necessary, due to the 3-dimensional features.

Epidemiological studies show that the majority of supernumerary teeth occur in the anterior region of the maxilla at a frequency that varies around 50% to 69% of cases.<sup>8</sup> In the mandibular molars region, the occurrence of these teeth is minor, comprising approximately 2% of the cases.

Regarding treatment proposals, considerable divergences have been observed between authors. It must always be considered that teeth in transverse or invert position never erupt and must be surgically removed.<sup>16</sup> Ideally, in these cases, the intervention should be carried out to take advantage of the maximum eruptive potential of the tooth and to preserve the integrity of the anatomical structures and adjacent teeth. After the surgical intervention, the dental literature indicates that 75% of the cases of restrained supernumerary teeth spontaneously erupt after 8 months to 3 years.<sup>3,16,19</sup>

As the diagnosis was made on time to prevent other complications and sequels, the treatment proposed in this clinical case consisted only of surgical removal and follow-up of the eruption of the permanent molars, which occurred within 13 months, similar to the period estimated by literature.

Through this case report, the authors attempted to emphasize the importance of the early diagnosis of supernumerary teeth and of an opportune intervention to prevent complications, simplify the treatment, and favor the prognostic of the patient and provide adequate clinical-radiographic control protocol. The scientific evidences found in the dental literature regarding supernumerary teeth agree with the adopted procedure.

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