Supernumerary submerged mandibular premolar: a case report

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Abstract

A supernumerary submerged tooth is not a usual finding on radiograph. In the present case report a supernumerary mandibular premolar was diagnosed between the roots of two erupted premolars. This case was treated with surgical exposure of the teeth followed by its removal, to prevent further complications like external root resorption, cyst formation.

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Introduction

Any Supernumerary teeth are defined as those in excess when compared to the normal series. Their reported prevalence ranges between 0.3–0.8\% in the primary dentition and 0.1–3.8\% in the permanent dentition.\[1\] Multiple impacted supernumerary teeth are rare. These are usually associated with syndromes such as the cleft lip and palate, cleidocranial dysostosis, Gardner’s syndrome etc. Supernumerary teeth may occur as single (76–86\%), double (12–23\%), or multiples (<1\%), unilaterally or bilaterally, and in one or both jaws.\[2\] They may occur in any region of the dental arch with a particular predilection for the premaxilla. The prevalence for non-syndrome multiple supernumerary teeth is less than 1\%, and the male-to-female ratio has been reported as 9:2.\[3\] Mandibular second premolars rank third — after third permanent molars and maxillary permanent canines — in frequency of impaction. The prevalence of...
impacted premolars has been found to vary according to age. The overall prevalence in adults has been reported to be 0.5% (the range is 0.1% to 0.3% for maxillary premolars and 0.2% to 0.3% for mandibular premolars). \[^4\]

As majority of supernumerary teeth lead to clinical complications like malocclusion due to disturbance in path of eruption, prevent eruption of developing teeth, external root resorption of the adjacent teeth, the standard treatment option is early removal. Here, we present a case of supernumerary mandibular premolar submerged in between the roots of two premolars.

**Case Report**

A female patient aged 28 years reported to the department of Periodontology, Subharti Dental College and hospital for routine check-up. Patient’s medical and dental history was not significant. On intraoral examination, stains, plaque and calculus were present on the lingual surface of lower anterior teeth. Full complements of maxillary and mandibular teeth were present (Figure 1a & 1b). Patient was advised for the oral prophylaxis and full mouth orthopantomograph for the documentation. Patient was asymptomatic and teeth in both the arches were aligned properly. Occlusion was normal (Angle’s class I molar relation). Radiograph revealed the presence of a supernumerary impacted premolar in between the right first and second premolars of mandibular arch (Figure 2a & 2b). Patient was explained about the consequences that could be associated with the supernumerary impacted premolar and was advised for the surgical removal of the same. After the informed consent was taken from the patient extraction was planned. Soft tissue flap of that region was raised and the bone present on the lingual side around the supernumerary impacted premolar was trimmed using the rotary instruments and the tooth was removed (Figure 3a & 3b). Flaps were sutured. Patient was given the post-operative instructions and antibiotics along with anti-inflammatory drugs for 5 days. Healing after 1 week was uneventful and the patient is under the follow-up.

**Discussion**

Supernumerary teeth are the ones which are found in excess than the normal set of teeth. If these teeth are supplemental then they are called the supernumerary teeth and if these

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excess teeth are abnormal in shape and size they are called the rudimentary teeth. The most common sites for the occurrence of supernumerary teeth, listed in order of frequency, are the maxillary midline, maxillary molar, mandibular premolar, maxillary lateral incisor, mandibular molar and the maxillary premolar regions. Supernumerary teeth may occur singly or in multiples, unilaterally or bilaterally and in one or both the jaws. The incidence of supernumerary teeth in the general population is fairly common- approximately 1 in every 110 persons.\(^5\) Literature specific to impacted supernumerary premolars is not extensive despite the fact that mandibular second premolars alone account for approximately 24% of all dental impactions excluding third molars and exhibit dramatic intraosseous migration.\(^6\)

The aetiology of supernumerary teeth still remains unclear. Although many theories for explanation of the development of this anomaly have been proposed, localized and independent hyperactivity of the dental lamina is the most generally accepted cause for the development of supernumerary teeth. Because supernumerary teeth are mostly seen in individuals with some other dental anomalies and developmental disorders, it is thought that their development may be influenced by a combination of hereditary and environmental factors.\(^7\) Studies have identified genes causing absence of teeth in generations of non-syndrome patients. The mutations in the genes of PAX911 are demonstrated to be associated with oligodontia.\(^8\) Markovic\(^9\) found a high rate of concordance for hypodontia in monozygous twin pairs, while dizygous twin pairs he observed were discordant. Nik-Hussein and Salcedo\(^10\) described a case of identical twins where double teeth with hypodontia were found stating its genetic influence.

In selecting an appropriate treatment option, the underlying etiological factors, space requirements, need for extraction of primary molars, degree of impaction and root formation of the impacted premolar should be considered. Factors such as the patient’s medical history, dental status, oral hygiene, functional and occlusal relationships and attitude toward and compliance with treatment will influence choice of treatment options.\(^5\) In the present case report the impacted mandibular premolar was present in between the two premolars and was impinging the roots of both the premolars. If the tooth was not planned to be removed it would have caused damage to both the premolars and further disturbing the arch integrity. However, treatment for this type of anomaly varies according to the position and conditions presented by this tooth, as well as the presence of any discomfort to the patient.\(^11\) Premolar impactions may be due to local factors such as mesial drift of teeth arising from premature loss of primary molars; ectopic positioning of the developing premolar tooth buds; or pathology such as inflammatory or dentigerous cysts.

**Conclusion**

The case reported here represents example of the possible presentations for patients with supernumerary teeth. It is necessary to examine and identify the teeth clinically and radiographically before a definitive diagnosis is done which enable to formulate a treatment plan. Treatment ranges from regular review, extraction
of the primary tooth (if required), surgical exposure of the impacted tooth, with or without orthodontic traction, auto-transplantation to its surgical removal. Any decision taken should be judged on individual merit.

References