

**ORTHODONTIC NEED FOR REMOVAL OF IMPACTED SUPERNUMERARY PREMOLAR -A CASE REPORT AND REVIEW OF SUPERNUMERARY TOOTH**

**Sunil Vasudev., Dinesh MR., Maneesha Sree., Sahana M S., Nawal Saleem and Niranjani raja**

Oral and Maxillofacial Surgery DAPM RV Dental College

**ARTICLE INFO**

**Article History:**

Received 4<sup>th</sup> June, 2021

Received in revised form 25<sup>th</sup> July, 2021

Accepted 23<sup>rd</sup> August, 2021

Published online 28<sup>th</sup> September, 2021

**Key words:**

Orthodontic, premolar, supernumerary tooth, surgical removal

**ABSTRACT**

A supernumerary tooth generally additional tooth found in any region of the arch. They are usually lead to responsible for disorders such as delayed tooth eruption, tooth malposition, or associated pathologies such as dentigerous cyst, requiring surgical intervention. Premolar region supernumerary teeth are often interfere with space closure and implant placement for orthodontic treatment procedure. Early diagnosis, then early removal prior to commencing orthodontic treatment is often recommended. In our case report we present surgical removal of supernumerary premolar tooth in order to aid ongoing orthodontic treatment.

*Copyright©2021 Sunil Vasudev et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.*

**INTRODUCTION**

A supernumerary tooth generally additional tooth found in any region of the arch. A supernumerary tooth is defined as any tooth or odontogenic structure formed from a tooth germ in excess of the usual number in any region of the dental arc.<sup>1</sup>

It could be unilateral, bilateral, single, multiple. Prevalence of supernumerary tooth in permanent teeth of between 0.15% and 3.9%.<sup>2</sup> They are usually lead to responsible for disorders such as delayed tooth eruption, tooth malposition, or associated pathologies such as dentigerous cyst, requiring surgical intervention. Premolar region supernumerary teeth are often interfere with space closure and implant placement for orthodontic treatment procedure<sup>3</sup>. In our case report we present surgical removal of supernumerary premolar tooth in order to aid ongoing orthodontic treatment.

**Case report**

A 20 years old patient reported with complain of irregularly arranged tooth on examination it diagnosis has Angles class 1 malocclusion with a class 3 jaw base on account of prognathic mandible average growth pattern [Figure 1]. At clinical evaluation all first premolar extraction advised. On radiological examination supernumerary premolar noted between 33 and 34 region [figure 2]. The patient was treated edge wise appliance (MBT prescription). During the treatment there is require a need of space, extraction of all first premolar advised. on cbct are noted a supernumerary tooth noted [figure 3].

From the CBCT, the root displacement of 3.4 and the root resorption of 4.4 were clear. Inferior Alveolar nerve noted on the 6.8 mm.[figure 4]



**Figure 1**

\*Corresponding author: **Sunil Vasudev**

Oral and Maxillofacial Surgery DAPM RV Dental College

The treatment objectives are to avoid further damage of the contiguous teeth and of the surrounded tissues and to maintain a good occlusion, balancing the risk/benefit ratio between the follow-up of the tooth and the extraction.



Figure 2



Figure 3

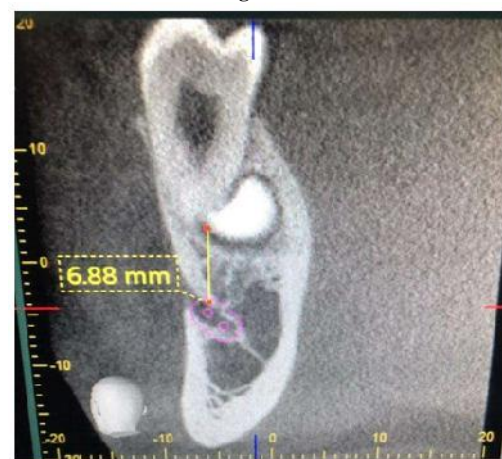


Figure 4

On root displacement and root resorption were found on the CBCT no other choice than extraction was possible. In this case, even if the ST are in a deep position and the access will remove healthy bone, the damage present on the roots suggests extracting the ST to prevent worsening of the root resorption.



Figure 5



Figure 6

Under local anaesthesia extraction of 24 and 34 done. Lateral Widow created on buccal side of 34 region and supernumerary teeth noted. [figure 4]. Tooth noted in a form of ball and socket. Purchase point created near socket off 34 tooth elevated using coupland elevators. Closure done using 3-0 silk. [figure 5]. patient prescribed with antibiotic and analgesic.

## DISCUSSION

Supernumerary teeth are extra teeth in comparison to the normal dentition. Supernumerary teeth in the premolar region, unlike other supernumeraries, occur more often in the mandible where they are generally of the supplemental type<sup>4</sup>

Their prevalence varies between 0.1% and 3.8%. The prevalence of supernumerary premolars is between 0.075-0.26%, and they may occur in single or multiple numbers.

Supernumeraries are more common in permanent dentition and its incidence is higher in maxillary incisor region, followed by maxillary third molar and mandibular molar, premolar, canine, and lateral incisor<sup>5</sup>

Occasionally, they are conical or smaller than normal particularly in the upper premolar regions.

Oehlers stated that supernumerary premolars can be distinguished from those of the normal series as being either diminutive, conical, or, if they are well formed, smaller than normal premolars.<sup>7</sup>

Supernumerary teeth in the premolar region might occur singly or in multiples.<sup>8</sup> Bilateral occurrence is uncommon and large percentage of supernumerary premolars remains impacted, unerupted, and usually asymptomatic; radiograph plays an important role in diagnosis of these<sup>9</sup>

Seventy-five percent of supernumerary premolars were determined to be unerupted, and the majority of them appeared asymptomatic.<sup>10</sup> Thus follow up is quite useful for orthodontic patients to detect any unerupted supernumerary premolars that might have an effect throughout the treatment.

The mandibular premolar region was found to have the highest frequency of supernumerary teeth in the condition "nonsyndrome multiple supernumerary teeth".<sup>11</sup>

Various theories exist for the different types of supernumerary. One theory suggests that the supernumerary tooth is created as a result of a dichotomy of the tooth bud.

Another theory, well supported in the literature, is the hyperactivity theory, which suggests that supernumeraries are formed as a result of local, independent, conditioned hyperactivity of the dental lamina.<sup>12</sup>

Heredity may also play a role in the occurrence of this anomaly, as supernumeraries are more common in the relatives of affected children than in the general population. However, the anomaly does not follow a simple Mendelian pattern.

While there is no significant sex distribution in primary supernumerary teeth, males are affected approximately twice as frequently as females in the permanent dentition.

This small peg-shaped conical tooth is the supernumerary most commonly found in the permanent dentition. It develops with root formation ahead of or at an equivalent stage to that of permanent incisors and usually presents as a mesiodens.

It may occasionally be found high and inverted into the palate or in a horizontal position. In most cases, however, the long axis of the tooth is normally inclined. The conical supernumerary can result in rotation or displacement of the permanent incisor, but rarely delays eruption.

The tuberculate type of supernumerary possesses more than one cusp or tubercle. It is frequently described as barrel-shaped and may be invaginated. Root formation is delayed compared to that of the permanent incisors. Tuberculate supernumeraries are often paired and are commonly located on the palatal aspect of the central incisors. They rarely erupt and are frequently associated with delayed eruption of the incisors.

The supplemental supernumerary refers to a duplication of teeth in the normal series and is found at the end of a tooth series. The most common supplemental tooth is the permanent maxillary lateral incisor, but supplemental premolars and molars also occur. The majority of supernumeraries found in the Howard lists odontoma as the fourth category of supernumerary tooth.<sup>10</sup> However, this category is not universally accepted. The term "odontoma" refers to any tumor of odontogenic origin. Most authorities, however, accept the view that the odontoma represents a hamartomatous malformation rather than a neoplasm. The lesion is composed of more than one type of tissue and consequently has been called a composite odontoma. Two separate types have been described: the diffuse mass of dental tissue which is totally disorganized is known as a complex composite odontoma, whereas the malformation which bears some superficial anatomical similarity to a normal tooth is referred to as a compound composite odontoma.

Problems Associated with Supernumerary Teeth are Failure of Eruption, Displacement, Crowding, Pathology ST may cause

some complications including delayed eruption and/or displacement of permanent teeth, root resorption, and cyst formation alveolar bone grafting, implant site preparation, asymptomatic. Moreover, the stability of the results is an important objective of the orthodontic treatment; specifically, post-permanent ST can also compromise this stability and interfere with orthodontic closure mechanics or with implant and mini-implant placement. Generally, supernumerary teeth are detected incidentally during radiographic examination, and late-developing supernumerary premolars (LDSP) are often detected at the end of an orthodontic treatment, because the age of formation is around 12-13 years. There are two options in case of LDSP, follow-up or extraction; and there are several factors to analyze and choose the best therapeutic option. Modern radiographic technologies as three-dimensional computed tomography (3D CT) and cone beam computed tomography (CBCT) allow a better assessment of the risk to extract or not to extract a supernumerary post-permanent tooth and a more detailed analysis of the stomatognathic system's bone structure. Management of Supernumeraries depends on the type and position of the supernumerary tooth and on its effect or potential effect on adjacent teeth.<sup>9</sup> The management of a supernumerary tooth should form part of a comprehensive treatment plan and should not be considered in isolation.

#### Recommendations Following Supernumerary Removal

Three factors influence the time it takes for an impacted tooth to erupt following removal of the supernumerary:

- The type of supernumerary tooth;
- The distance the unerupted permanent tooth was displaced;
- The space available within the arch for the unerupted tooth.

In our present case supernumerary removal have been suggested because need space in the arch for orthodontic corrections. author describe various type and need for removal of supernumerary teeth

## CONCLUSION

Supernumerary teeth in the premolar region, unlike other supernumeraries, occur more often in the mandible, where the supernumerary teeth are generally of the supplemental type. It has been suggested that supernumerary premolar teeth belong to a third (postpermanent) series, developing from extensions of the dental lamina. Several consequences can result from the presence of supernumerary premolars especially in the mandible, such as cyst formation, transposition, and malocclusion. If a supernumerary premolar tooth is unerupted, as occurs in the majority of patients, and diagnosed early, then early removal prior to commencing orthodontic treatment is often recommended.

## Reference

1. L. K. Rubenstein, S. J. Lindauer, R. J. Issacson, and N. Germane, "Development of supernumerary premolars in an orthodontic population," *Oral Surgery, Oral Medicine, Oral Pathology*, vol. 71, pp. 392-395, 1991.
2. Liu JF. Characteristics of premaxillary supernumerary teeth: a survey of 112 cases. *ASDC J Dent Child* 1995; 62:262-5.
3. Levine N. The clinical management of supernumerary teeth. *J Can Dent Assoc* 1961; 28:297-303.

4. Kinirons MJ. Unerupted premaxillary supernumerary teeth. A study of their occurrence in males and females. *Br Dent J* 1982; 153:110.
5. Foster TD, Taylor GS. Characteristics of supernumerary teeth in the upper central incisor region. *Dent Pract Dent Rec* 1969; 20:8-12.
6. Di Biase DD. The effects of variations in tooth morphology and position on eruption. *Dent Pract Dent Rec* 1971; 22:95-108.
7. L. D. Rajab and M. A. M. Hamdan, "Supernumerary teeth: review of the literature and a survey of 152 cases," *International Journal of Paediatric Dentistry*, vol. 12, no. 4, pp. 244–254, 2002.
8. M. Fader, S. N. Kline, S. S. Spatz, and H. J. Zubrow, "Gardner's syndrome (intestinal polyposis, osteomas, sebaceous cysts) and a new dental discovery," *Oral Surgery, Oral Medicine, Oral Pathology*, vol. 15, no. 2, pp. 153–172, 1962.
9. B. L. Jensen and S. Kreiborg, "Development of the dentition in cleidocranial dysplasia," *Journal of Oral Pathology and Medicine*, vol. 19, no. 2, pp. 89–93, 1990.
10. S. Yassaei, M. Goldani Moghadam, and S. M. Tabatabaei, "Late developing supernumerary premolars: reports of two cases," *Case Reports in Dentistry*, vol. 2013, Article ID 969238, 4 pages, 2013.

**How to cite this article:**

Sunil Vasudev *et al* (2021) 'Orthodontic Need for Removal of Impacted Supernumerary Premolar -A Case Report and Review of Supernumerary Tooth, 10(9), pp. 25114-25117. DOI: <http://dx.doi.org/10.24327/ijcar.2021.25117.5012>

\*\*\*\*\*