

## Surgical Removal of Supernumerary Teeth – A Case Report

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**Abstract:** Supernumerary teeth can present in various forms and in any region of the mandible or maxilla, but have a predisposition for the anterior maxilla. It is a developmental anomaly and has been argued to arise from multiple etiologies. A hyperactive dental lamina where the localized and independent hyperactivity of dental lamina is the most accepted cause for the development of the supernumerary teeth; it is suggested that supernumerary teeth are formed as a result of local, independent, conditioned hyperactivity of the dental lamina. These teeth may remain embedded in the alveolar bone or can erupt into the oral cavity. When it remains embedded, it may cause disturbance to the developing teeth. Supernumerary teeth when present can cause both esthetic and pathologic problems. Supernumerary teeth in the maxillary midline are common. Early detection of such teeth is most important if complications are to be avoided. This report presents a case of a 12 year old girl with two impacted supernumerary tooth in the maxillary anterior region. The impacted supernumerary teeth were surgically removed.

**Key words:** Maxillary central incisor, Mesiodens, Supernumerary tooth

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### I. Introduction

Development of the tooth is a continuous process with a number of physiologic growth processes and various morphologic stages interplay to achieve the tooth's final form and structure. Interference with the stage of initiation, a momentary event, may result in single or multiple missing teeth (hypodontia or oligodontia respectively) or supernumerary teeth.<sup>[1]</sup> A supernumerary tooth is one that is additional to the normal series and can be found in almost any region of the dental arch<sup>[2]</sup>. The term mesiodens denotes a supernumerary tooth located between the maxillary central incisors<sup>[3]</sup>. It has been found that approximately 25% of the permanent supernumerary teeth are erupted and the remainder are unerupted, whereas 73% of the primary supernumerary teeth are erupted. Supernumerary teeth have a reported incidence in the permanent dentition of 1.5-3.5% and a male to female ratio of approximately 2:1, with 98% presenting in the maxilla and, of these, 75% within the maxillary midline<sup>[4]</sup>. In the primary dentition, the incidence is said to be 0.3%-0.8% and in the permanent dentition 1.5%-3.5%<sup>[5]</sup>. Supernumerary teeth may develop in the direction of normal eruption, appear inverted, transverse, assume an ectopic position or follow an abnormal path of eruption<sup>[6]</sup>. Although the exact aetiology remains unclear, various theories include atavism (evolutionary throwback), hyperactivity of the dental lamina, dichotomy of the tooth germ and other genetic factors. More recently, a multifactorial aetiology has been suggested<sup>[7]</sup>. The most common location of supernumerary teeth is at the premaxillary region and it may cause pathological condition such as failure of eruption of the maxillary incisors, displacement or rotation of the permanent tooth<sup>[8]</sup>. Further problems can include crowding, diastema and cyst formation<sup>[9]</sup>. When any of the above complication occurs or is anticipated, surgical removal of the supernumerary tooth is indicated. Surgical treatment may involve extraction of retained primary teeth, removal of the supernumerary teeth and in some cases exposure and bonding of the permanent tooth<sup>[10]</sup>. In addition, other authors have highlighted the importance of space availability to facilitate spontaneous incisor eruption<sup>[11]</sup>.

This article will present the surgical management of a two palatally impacted supernumerary teeth.

### II. Case Report

A 12-year-old girl reported to the department of Pedodontics and Preventive Dentistry, Sinhgad Dental College, Pune, with a chief complaint of pain in the upper anterior region of jaw. Patient had no significant medical history. On clinical examination her upper left central and lateral incisors were carious. Patient was advised a radiograph and after careful examination it was noted that two unerupted mesiodens were in close approximation with the roots of the upper right and left central incisors (Fig.1). A standard upper occlusal radiograph was taken which showed the presence of supernumerary tooth (Fig.2) and SLOB (same side lingual, opposite side buccal) technique with two intra-oral periapical radiographs confirmed the presence of supernumerary tooth on the palatal side, also it was observed that the mesiodens associated with right central incisor was inverted.

Taking into considerations the radiographic findings and the age of the patient, surgical removal of the mesiodens was planned. Patient was advised antibiotics and analgesics 3 days prior to surgery. After 3 days, treatment procedure was initiated by administering local anesthesia (Lignocaine Hydrochloride Anhydrous 20mg, 2% w/v, Epinephrine 1:100,000, Aquafine Injecta, Pvt Ltd, India) in the upper labial sulcus and palatal area in the region of 13 to 23. Palatal mucoperiosteal flap was raised and adequate amount of bone was removed using slow speed round bur (Fig.3) with copious saline irrigation and the impacted supernumerary tooth was exposed (Fig.4). The supernumerary tooth associated with right central incisor was removed. However, the second supernumerary tooth was not visible clinically so a guttapercha point was introduced through the drilled bone to check the tooth's exact location (Fig.5). It was found that the tooth was located palatally and was removed accordingly. The extraction socket was inspected for any pathology. The extracted supernumerary teeth were conical in shape (Fig.6). The margins of the bone were then smoothed. The palatal mucoperiosteal flap was repositioned and sutured (Fig.7) with 3-0 Black braided silk (Mersilk, Ethicon, Inc., Johnson & Johnson company, USA). Patient was kept on antibiotic, anti-inflammatory and analgesic regimen for 5 days. After 8 days, the healing was uneventful (Fig.8), the sutures were removed and occlusal radiograph was taken (Fig.9). Root canal treatment for the carious upper left central incisor and restoration of lateral incisor was also completed in the successive appointments. (Fig.10)

### **III. Discussion**

Supernumerary teeth can affect the normal position and eruption of adjacent teeth and often require clinical intervention. It is essential not only to enumerate but also to identify the supernumerary teeth (ST) present clinically and radiographically before a definitive diagnosis and treatment plan can be formulated [12]. The mesiodens in this patient has probably originated from the permanent dentition tooth bud since in the primary dentition, supernumerary teeth occur most often in the lateral incisor regions, as opposed to permanent supernumerary teeth, which prevailed in the central incisor regions [13]. Unerupted mesiodens may often cause retardation or obstruction of eruption of permanent incisors which may result in mesial shifting of the teeth to the opposite side, exceeding the midline and obliterating space for future eruption of succeeding central incisor.

Supernumerary teeth in the premaxillary region are broadly of two types: one containing teeth of normal morphology known as supplemental teeth and the other of abnormal shape. The latter class has been further categorized into the conical type (peg-shaped) and the tuberculate type. The tuberculate supernumerary tooth seems to occur most frequently palatal to the upper central incisor and is later in its development than the conical tooth. It has also been documented that the conical-shaped supernumerary tooth does not usually affect the eruption of the adjacent permanent incisors but may cause their displacement, which may involve the crown, the root or the whole tooth. The conical supernumerary may be non-inverted or inverted. When non-inverted, it may remain unerupted palatal to the permanent incisors. When inverted, it may point posteriorly towards the nose or may even erupt into the nose [14]. In the present case the two supernumerary teeth were seen; one was conical, non-inverted in relation with right central incisor and the other conical inverted and associated with left central incisor.

Teeth located in the nasal cavity are a rare phenomenon but a case has been reported where a mesiodens if left untreated can erupt in the nasal cavity [15]. In this patient, it is unlikely that the inverted ST will erupt in the nasal cavity but if it is left untreated without being monitored, it may give rise to the same problem as reported previously [15].

The treatment protocol available for management of impacted permanent teeth due to supernumerary teeth are diverse. Methods of management of crowding or impaction due to supernumerary tooth are; removal of supernumerary teeth or tooth only, removal of supernumerary teeth and bone overlying impacted teeth, incision of fibrous tissue over the alveolar ridge to promote the eruption with or without orthodontic traction [16]. There are two schools of thoughts for the removal of ST [17]. The delayed approach recommends intervention upon apical maturation of the central and lateral incisors, at an age around eight to ten years. The immediate approach calls for removal of the ST soon after the initial diagnosis of their presence [18]. A survey of 112 supernumerary teeth showed that the teeth in transverse or inverted positions never erupted and it is advisable for the ST to be surgically removed since in many instances, ST are associated with disturbances of tooth eruption, midline diastema or development of a local malocclusion [19]. Thus in this patient, as the supernumerary teeth were in close proximity with the permanent teeth and the patient was from rural area so periodic monitoring would not have been possible., it was necessary to remove both the supernumerary teeth as both the overlying permanent central incisors were well developed.

If teeth are causing no complications and are not likely to interfere with orthodontic tooth movement (i.e if they lie beyond the dental apices) they can be monitored with yearly radiographic review. The patient should be warned of complications, such as cystic change and migration with damage to nearby roots. If the patient does not wish to risk such complications, it is acceptable to remove supernumerary teeth. If they are

associated with the roots of permanent teeth, it may be sensible to await full root development before surgical extraction to minimize the chances of root damage.

#### **IV. Conclusion**

Supernumeraries are relatively common and can cause a variety of complications. The clinician should recognize signs suggesting the presence of supernumerary teeth, particularly aberrations in the eruptive pattern, and perform the relevant investigations. On diagnosis, each case should be managed appropriately in order to minimize complications to the developing dentition. This may include referral to an orthodontist too.

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**Fig. 1** –Intraoral periapical radiograph showing two impacted supernumerary teeth associated with permanent central incisors



**Fig. 2 –** Maxillary true occlusal radiograph



**Fig. 3 -** Flap raised and bone removed



**Fig. 4 -** Supernumerary tooth exposed



**Fig. 5 –** Guttapercha inserted to locate the position of supernumerary tooth



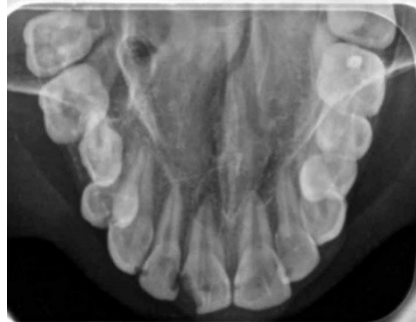
**Fig .6 –** Conical supernumerary tooth



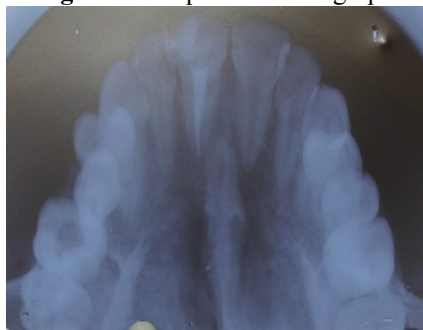
**Fig. 7** – Flap sutured



**Fig. 8** – Post operative healing after 8 days



**Fig. 9** –Post operative radiograph



**Fig. 10** –Root canal treatment completed of 21