

Case Report

Non Syndromic Multiple Supernumerary Teeth and Their Clinical Management, A Case Report

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Article History

Received: 26.09.2021

Accepted: 04.11.2021

Published: 10.11.2021

Abstract: Supernumerary teeth are uncommon but have been well documented clinically. They are extra teeth or tooth-like structure, either erupted or unerupted in addition to the 32 permanent teeth. Mesiodens is one of these located in the midline between the two central incisors. Nasal teeth result from ectopic eruption of supernumerary teeth, can be identified by performing Cone Beam Computed Tomography (CBCT). Supernumerary teeth may lead to delayed eruption or non-eruption, displacement of permanent teeth, resorption or malformation of adjacent roots, and cystic formation (rarely). Multiple supernumerary impacted teeth are usually associated with syndromes, metabolic or hormonal disorders. This paper describes surgical management of a rare case of 2 palatally placed, one horizontal and impacted supernumerary, one in the anterior maxilla and other in the floor of the nasal cavity, which were detected during a radiographic examination for labial placement of permanent right central incisor due to a rotated mesiodens in the case of a healthy 14-year-old boy reported at the Dental centre.

Keywords: Mesiodens, Palatal and Horizontal impaction, Supernumerary tooth, Cone-beam computed tomography.

INTRODUCTION

A supernumerary tooth may closely resemble the teeth of the group to which it belongs i.e. molars, premolars or incisors, or it may have little resemblance in size or shape to the teeth with which it is associated. The state of having extra teeth is called as Hyperdontia. The existence of first report of supernumerary tooth has been found around 23–79 AD. The commonest form of supernumerary teeth frequently found is the mesiodens [1] seen in premaxilla. In 1917, Balk gave the term “mesiodens” which indicated a supernumerary tooth present mesial to both central incisors and also appeared as peg shaped with either inverted or normal position. Two types of mesiodens are found depending on their shape and size. Eumorphic tooth is the first type which is nothing but a regular morphology and similar to the central incisor. Dysmorphic teeth being the second type which has dissimilar shapes and sizes and are further classified into conical, tuberculate, supplemental [2]. They can be further classified on the basis of the position (buccal, palatal, and transverse), and orientation (vertical or normal, inverted, transverse, or horizontal).

Etiology of the development of supernumerary teeth is not clear. It may be due to dichotomy of the tooth bud [3] or due to hyperactivity theory, suggesting that they are formed as a result of local, independent, conditioned hyperactivity of dental lamina [3, 4], proliferation of the remains of the dental lamina, atavism (reversion to the ancestral human dentition), and a combination of genetic and environmental factors [6]. Their occurrence may be single, multiple, unilateral, bilateral, erupted, impacted, and in one or both the jaws. Males are affected approximately twice as frequently as females in permanent dentition. Multiple supernumerary teeth are rare in individuals with no other associated diseases or syndromes [5]. Multiple supernumerary teeth are usually associated with conditions such as cleft lip and palate or syndromes like cleidocranial dysplasia and Gardner's syndrome.

Mesiodens, which are usually unaesthetic frequently, causes either malposition or delayed eruption of adjacent central incisors, midline diastema, caries, and odontogenic cysts, gingival and periodontal problems. They can be the

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reason for impaction, resorption, and displacement of central incisors and may extend into the nasal cavity. Hence, early diagnosis and extraction of mesiodens is very essential to avoid these types of complications.

This case report documents supernumerary teeth presented as non-syndromic supernumerary tooth in the floor of the nasal cavity and premaxilla and supplemental mesiodens with labial placement of permanent incisor.

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CASE REPORT

A 14-year-old boy reported to the Dental centre with complaint of an extra tooth in between two upper front teeth causing an unaesthetic appearance. Medical, dental, and family histories were not significant. He gave no previous history of maxilla-facial trauma / surgery in that area and had a full erupted dentition.

Oral Findings

Oral examination revealed one erupted rotated mesiodens wedged between the upper right lateral incisor and left permanent central incisor (12 and 21). The upper right central incisor (11) had uncomplicated crown fracture at the mesioincisal angle. His upper right central incisor (11) erupted labial to 12. The intraoral view is shown in Figure 1.



Figure 1: Intraoral view showing fractured upper left permanent central incisor and rotated mesiodens (arrow)

Radiographic Findings

A panoramic survey of the teeth and jaws and a standard upper occlusal view revealed two more unerupted supernumerary teeth.



Figure 2: Maxillary occlusal view showing 3 supernumerary teeth (arrow)

CBCT Findings

The buccopalatal position of the unerupted supernumerary teeth was located using Cone Beam Computed Tomography (CBCT). First supernumerary tooth is erupted and placed in the arch (11 region); crown shows mild malformation; root formation is complete. Second supernumerary tooth is impacted and placed horizontally apical and palatal to the roots of 11, 12 and first supernumerary tooth; no evidence of root resorption or cystic changes. Third supernumerary tooth is impacted in the floor of nasal fossa; placed horizontally crown palatal and root labial in 21 and 22 region; no evidence of cystic changes.

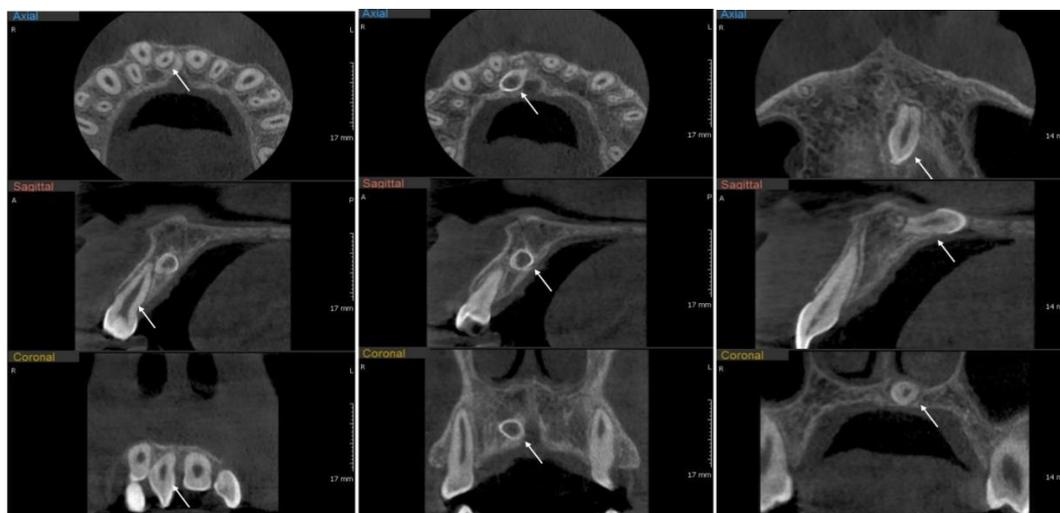


Figure 3: Exact position of the mesiodens and impacted supernumerary teeth (CBCT)

Treatment

The surgical removal of the mesiodens and the supernumerary teeth in the maxilla was carried out under local anesthesia, (Lignocaine Hydrochloride Anhydrous 20mg, 2% w/v, Epinephrine 1:80,000). Under aseptic condition, intra-alveolar extraction (forceps technique) of mesiodens was done. The surgical site was prepared; exposure of the desired site was carried out by raising full thickness palatal flap from distal aspect of first premolar on left side to distal aspect of first premolar on right side. The impacted teeth were removed by very slow bone guttering technique with copious saline irrigation. Wound toileting was done and the flap was closed with a vicryl 3-0 suture material with an interrupted suturing technique and hemostasis was achieved. The wound healing was normal. Tooth specimens were sent for histopathology. A histopathological examination revealed the three teeth had normal histological features of a tooth and were termed as supernumerary teeth. The case was followed up for 6 months which showed good bone formation radiographically. The patient is now under regular review regarding future-fixed orthodontic treatment.

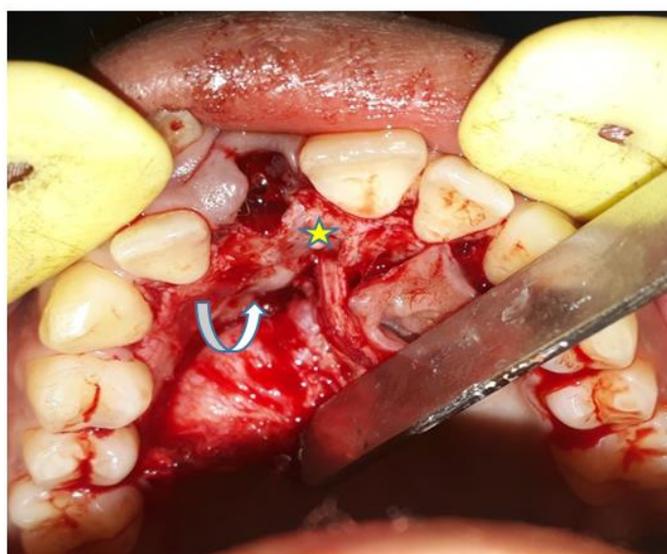


Figure 4: A full thickness palatal flap raised with exposing the impacted supernumerary tooth (arrow) and preserving nasopalatine vessels (asterisk)

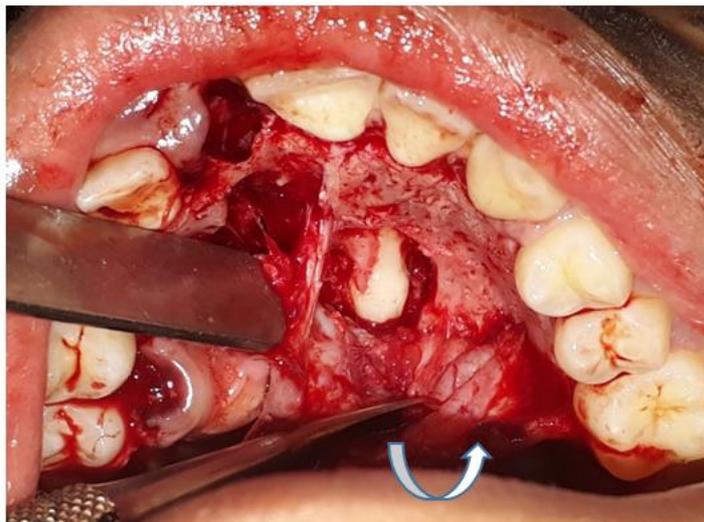


Figure 5: Tooth in the floor of the nasal cavity approached palatally



Figure 6: Extracted supernumerary teeth

DISCUSSION

The incidence of supernumerary teeth affects roughly less than 1% of population [8]. The common area involved happens to be upper incisor which is also known as Mesiodens. Usually, multiple supernumerary teeth are associated with various syndromes like Gardner syndrome, Down syndrome, cleido-cranial dysplasia, cleft lip and palate, Ellis–van Creveld syndrome, Marfan syndrome, and trichorhinophalangeal syndrome, which are highly correlated with heredity [14, 17]. But here, it is a non-syndromic case of multiple supernumerary teeth.

Numerous theories have been proposed for the development of supernumerary teeth [8].

- Phylogenetic theory of Atavism (evolutionary throwback)
- Dichotomy theory (cleavage of a single tooth bud to two homologous or heterologous parts)
- Dental lamina hyperactivity theory.
- Combination of hereditary and environmental factors

Supernumerary teeth are classified based on morphology (conical, tuberculate, and supplemental), location (mesiodens, paramolar, distomolar, and parapremolar), position (buccal, palatal, and transverse), and orientation (vertical or normal, inverted, transverse, or horizontal) [9]. In our case, the impacted supernumerary ones were conical, palatal, and the mesiodens was supplemental.

The palate and maxillary sinus are the most common and nasal cavity a relatively rare site of ectopic eruption of teeth due to their anatomic proximity. The complications most often associated with the tooth itself are a nasal eruption and cystic degeneration. Dentigerous (follicular) cyst formation is another problem associated with unerupted

supernumerary teeth [16]. Most problems associated with supernumerary teeth are due to their ability to interfere with normal eruption and position of the adjacent teeth. These problems include loss of vitality, diastema formation, displacement, and impaction.

Radiographs play a significant role in identification and localization of ST, especially when they are impacted. Two-dimensional imaging techniques (periapical radiographs, occlusal radiographs, and orthopantomographs) are helpful to the clinicians, but their buccal or lingual positioning is difficult to determine due to the superimposition of the adjacent structures [6]. Clark and Richards had suggested horizontal and vertical tube shift technique, respectively, to determine exact location of ST using conventional radiography. Both of these are widely accepted due to their simplicity [11, 12]. Recently, Toureno et al. proposed a guideline to use three-dimensional imaging modalities (cone beam computerized tomography) along with two-dimensional imaging modalities for better assessment of ST, planning surgical intervention with minimal treatment errors [10, 15].

Several authors have given different opinions for the management of ST, particularly timing of the removal of ST. Most of them have recommended the early intervention of ST. The treatment options for managing ST depend on their orientation and position, the age of the patient, and any associated complications. There are two common opinions for removal of ST is that early identification and removal, in contrast to some which suggest no removal of ST, if there was no associated pathology [7]. It is very important to remove ST at a young age, if it is damaging adjacent teeth or causing any other complication. When an extensive amount of bone is removed or an open approach method is used to expose the impacted teeth, surgically, periodontal complication can be occurred such as gingival recession, delay in periodontal healing, gingivitis, bone loss and decrease in the width of keratinized gingiva [13].

CONCLUSION

Supernumerary teeth can be present in any region in the oral cavity. They may erupt or remain impacted and can lead to complications like displacement or resorption of adjacent teeth or cyst formation. Hence, early diagnosing and extraction of the supernumerary is very essential to avoid these types of complications. This case is presented for its rarity, where CBCT helped in ascertaining its presence and could further add to the present academic literature available.

Patient consent: Obtained

Financial Support and Sponsorship: Nil

Conflicts of Interest: There are no conflicts of interest.

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Citation: Jaya Sarkar (2021). Non Syndromic Multiple Supernumerary Teeth and Their Clinical Management, A Case Report. *South Asian Res J Oral Dent Sci*, 3(6), 125-130.