

**CASE REPORT****OPEN ACCESS**

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**Rudimentary Impacted Supernumerary Tooth-Its detection & Management:
A Case Report****Samar H. Abu Al Ees**5th Year Dental Student - Al Azhar University

Supernumerary teeth, or hyper-dontia, is an odontomatologic anomaly when there is excess tooth substance than the usual configuration of 20 deciduous, and 32 permanent teeth. They occur in many forms and positions and are potentially disadvantageous as they can block the eruption path of teeth, as well as cause deviations in normal occlusions like midline diastemas, and thus pre-emptive diagnosis and removal is indicated. A 24-year-old female presented with a complaint of pain in the area of upper central incisors on the application of pressure, to our diagnostics department. Intra-oral examination revealed a small bulge in the area between the apexes of tooth no. 21 and 22. It was initially misdiagnosed with complex odontoma based on her past medical history (surgical removal of bone mass in the same area 5 years ago). A CBCT was advised to investigate further, which revealed a supernumerary tooth, concluding our diagnosis. Since the tooth was causing discomfort to the patient, surgical removal was advised and carried out promptly. 80% of all supernumerary teeth are located in the anterior medial region of the maxilla. It's usually discovered as a result of a patient's complaint or when they seek treatment for malocclusion or bony swelling. Performing the appropriate and detailed image analysis is critical for correct diagnosis in locating and identifying the positioning of the tooth, and for efficient surgical planning.

Keywords: Hyper-dontia; Odontogenic; Rudimentary

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INTRODUCTION

Supernumerary teeth, or hyperdontia, is defined as any teeth or tooth substance in excess of the usual configuration of 20 deciduous, and 32 permanent teeth. [1] They may occur singly, multiply, unilaterally or bilaterally, erupted or impacted, in one or both jaws, and in the deciduous as well as in permanent dentition. The prevalence of supernumerary teeth for permanent dentition is between 0.5 and 5.3% and in primary dentition is between 0.2 and 0.8% in various populations. [2,3] In permanent dentition, supernumerary teeth are more frequent in males than in females, with a proportion of 2:1 [4,5] the prevalence of supernumerary teeth among Palestinian patients is 0.86%, with males more frequently affected than females in the ratio of 3.25:1.[6]

They are most frequently located in the maxilla, the anterior medial region, where 80% of all supernumerary teeth are found. More rarely, they can be located in the maxillary distomolar zone, mandibular premolar, maxillary premolar, mandibular distomolar, maxillary canine zone, and mandibular incisors. [7] Genetics might play a role in the etiology of supernumerary teeth to some extent, as supernumerary teeth are more commonly found in relatives of affected individuals. However, the inheritance pattern does not follow Mendelian principles, Environmental factors must also be considered in the etiology of supernumerary teeth such as infection e.g.: rubella, irradiation, drugs, e.g., thalidomide. [8] Teeth may erupt normally or may be impacted and disadvantageous causing some complications such as failure of eruption, displacement, crowding, diastemas, development of odontogenic cysts, and resorption of neighboring teeth. [4,9,10]

CASE REPORT

A 24 years old female patient came to our diagnosis clinics. The patient complained of pain in area of the maxillary central incisors when applying a gentle pressure. On intraoral diagnosis we observed a small hard bulge in the area between the apexes of teeth No. 21-22.

Family history was non-contributory. Medical history revealed that she underwent a surgical removal of a bone mass before 5 years in the same area, after panoramic imaging (Fig. 1) It was first thought to be a complex odontoma based on her past medical history

To confirm our diagnosis, we ordered a CBCT (Fig. 2) and we rule out the presence of an extra rudimentary tooth. Since the tooth was causing discomfort to the patient, surgical removal was advised and carried out promptly. 80% of all supernumerary teeth are located in the anterior medial region of the maxilla. It's usually discovered as a result of a patient's complaint or when they seek treatment for malocclusion or bony swelling. Performing the appropriate and detailed image analysis is critical for correct diagnosis in locating and identifying the positioning of the tooth, and for efficient surgical planning.



Fig. 1-Panaromic Radiograph

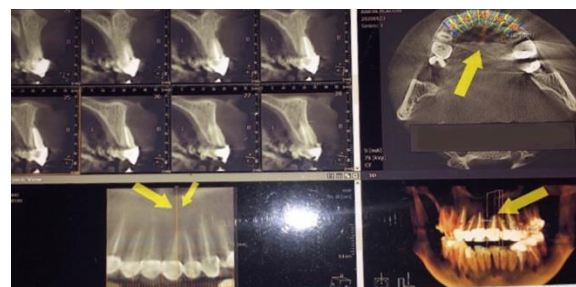


Fig. 2-CBCT

The treatment options for managing supernumerary tooth depend on their orientation and position, the age of the patient, and any associated complications. So, it can be left in place or surgically removed. In this case because the tooth was causing discomfort (patient suffered from pain with light pressure) surgical removal was indicated.

1. Anesthesia (lidocaine 2% epinephrine 1:100.000)
2. Triangle flap by Using a no. 15 scalpel blade.
3. Careful reflection of the flap.
4. Removal of the tooth and it's fragments.

5. The surgical area was sutured with silk thread 4.0.



Fig. 3- Flap Reflection and ST removal



Fig. 4-Suturing with Silk Thread 4.0

DISCUSSION

After reviewing the patient medical history accurately, we discovered that she had a surgical removal of a bone mass before 5 years at the same site, at was first thought to be a recurrence of the past boney lesions, after the confirmation of our diagnosis with CBCT (as it has been proved as the most effective three-dimensional means of examining dental and associated osseous structures) and intraoral exploration, we rule out that it's an impacted rudimentary extra tooth. A supernumerary tooth is the one that is additional to the normal series and can be found in almost any region of the dental arch; unilaterally or bilaterally and in either of the jaws.

Studies show that the anterior maxilla is one of the most common location for a single supernumerary

tooth [11]. The etiology of supernumerary teeth is not completely understood. Various theories exist such as:

1. A result of a dichotomy of the tooth bud, dividing of tooth into two teeth of equal size or one normal and one dysmorphic tooth with two equal or different sized parts [12].
2. The hyperactivity theory, which suggests that supernumeraries are formed as a result of local, independent, conditioned hyperactivity of the dental lamina. [12,13] Remnants of the dental lamina can persist as epithelial pearls or islands, "rests of Serres" within the jaw, when epithelial remnants are subjected to stimulation by induction factors, an extra tooth bud is formed resulting in extra odontogenic structure[14], the rudimentary form arises from proliferation of epithelial remnants of the dental lamina induced by pressure of the complete dentition.
3. Heredity may also play a role in the occurrence of this anomaly (Gardner's syndrome, Ehlers-Danlos syndrome, Fabry disease, Cleft palate and lip, Cleidocranial dysplasia). [15,16,17,18,19]
4. Phylogenetic theory, although it has been discounted as it would only explain single anomalies of ectopic teeth, it explains that the presence of supernumerary teeth involves a regression towards now extinct ancestral tissues [20].

Supernumerary teeth can cause a variety of dental problems that interfere with normal oral function and health, some of these problems include:

1. Adjacent teeth displacement is a common feature in cases that associated with supernumerary tooth [21]. The amount of displacement varies from a mild rotation to complete displacement.
2. Root resorption of the adjacent teeth sometimes leads to loss of tooth vitality.
3. Cyst formation, it has been reported that cyst formation due to supernumerary tooth was observed in 11% of the cases especially the dentigerous cyst. [22,23].

Detection of supernumerary teeth is done through these ways at first, it is detected if clinical complications such as midline diastema, displacement, delayed or failure of eruption, rotation, and impaction of teeth is present, then localization is essential for the management if surgical intervention is needed. It has been reported that panoramic radiographs alone are not always useful for the identification of supernumerary tooth [24].

So, it's important to combine radiographs, Vertical tube shift and horizontal tube shift techniques are commonly used techniques for localization of supernumerary teeth, CT scan is also useful.

The optimal time for surgical intervention in such cases remains controversial [25]. It is very important to remove supernumerary tooth at a young age if it is displacing the surrounding teeth or causing any other complication.

CONCLUSION

Supernumerary teeth are extra to normal complement in both dentitions, but is more common in permanent dentition, this type of anomaly can be discovered as a result of patient's complaint or when they seek treatment for malocclusion or by bony swelling. Performing the appropriate and detailed image analysis is critical for correct diagnosis (position and location) and for the surgical planning to be effective and faster

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