



CASE REPORT

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Surgical Removal of Multiple Impacted Supernumerary Teeth in the Maxilla of a Non-Syndromic Child Using Advanced Diagnostic Imaging: A Case Report

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ABSTRACT

This article describes case report of multiple supernumerary teeth, which is an uncommon developmental condition where extra teeth form in dental arches. Typically, these extra teeth are found in premaxilla (the front part of the upper jaw) and are often associated with various syndromes such as Gardner's syndrome, Cleidocranial dysplasia, Ehlers-Danlos syndrome, and Down syndrome. However, in rare instances, supernumerary teeth can appear without any associated syndrome, which makes such cases particularly noteworthy. This report also emphasizes importance of clinical and advanced radiographic diagnosis.

Keywords: Multiple Supernumerary Teeth, Premaxilla, CBCT, Surgical Extraction.

1. INTRODUCTION

Supernumerary teeth is a developmental aberration characterized by additional number of teeth to normal dentition. Maxillary incisor region is the most common with incidence ranges from 76% to 86% and less than 1% for single and multiple supernumerary teeth respectively [1]. Syndromes like Gardner's syndrome, Cleidocranial dysplasia are associated with multiple supernumerary teeth [2]. They have been classified based on location, number, morphology as mesiodens, paramolars, distomolars and shape as supplemental, odontomes, tuberculate, conical [3]. Diagnosing supernumerary teeth in premaxilla among children poses a great challenge for the clinician, as they are accidentally discovered during routine radiographic examinations and usually associated with delayed eruption of permanent teeth. In such cases, CBCT helps us determine the number and location [4].

The present case report aims to demonstrate

the successful surgical management of nonsyndromic female patient with multiple impacted supernumerary teeth and permanent teeth in the maxillary anterior region using CBCT.

2. Case Report

A 09- year - old female child presented to Department of Paediatric and Preventive Dentistry with a complaint of unerupted upper anterior teeth affecting aesthetics and normal function gives history of exfoliation of primary teeth at the 6 years of age with no significant Medical and Family history. Clinical Examination revealed mixed dentition with unerupted bilateral central and right lateral incisors (Fig 1). Preliminary investigations with Maxillary occlusal radiograph and IOPA revealed impacted maxillary permanent teeth and supernumerary teeth. Further to accurately diagnose the total number and location of supernumerary teeth, the CBCT was advised, which confirmed three supernumerary teeth close to 11 and

21 interrupting the eruption of permanent incisors (Fig 2). The case was discussed and surgical extraction of supernumerary teeth was planned under LA. Parent consent was obtained, and buccal and palatal flaps were reflected conservatively considering the presence of permanent teeth and other anatomical structures (Fig 3). During the procedure, fourth supernumerary tooth which was superimposed was identified and extracted (Fig 4). The flaps were sutured, post operative instructions were given.



Fig 1: Intraoral examination revealing unerupted maxillary incisors



Fig 2: CBCT image revealing developing supernumerary teeth in relation to 11



Fig 3: CBCT image revealing developing supernumerary teeth in relation to 21



Fig 4: Elevated palatal mucoperiosteal flap exposing impacted supernumerary teeth

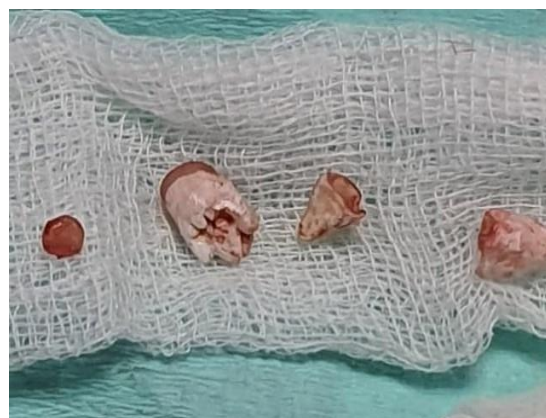


Fig 5: Extracted supernumerary teeth

3. Outcome & Follow up

On recall after 10 days, sutures were removed and satisfactory wound healing was observed. Partial eruption of 12 was noticed during follow-up on 14th day patient is on regular monitoring protocol.

4. DISCUSSION

Any asymmetric, ectopic, or delayed eruption of the maxillary permanent central incisors should notify the clinician that patient may have an impacted supernumerary tooth and case has to be closely monitored. Advanced diagnostic technique such as CBCT provides three dimensional imaging of number and position and location of mesiodens. In the present case CBCT helped us in determining best course of action by early detection and planning conservative treatment approach. The delayed eruption of permanent incisors, midline diastema, axial rotation or inclination of erupted permanent incisors, resorption of adjacent teeth's roots, root abnormality, cyst formation, and intraoral infection are among the clinical problems associated with mesiodens [5, 6]. Impaction of permanent incisors as a result of extra teeth is an uncommon occurrence in clinical practice. Despite few theories etiology of mesiodens remains unclear. It may be seen as an isolated finding or as part of a syndrome. A genetic basis for supernumerary teeth was suggested considering observation of a higher rate of hyperdontia among related families since it does not follow a simple Mendelian

pattern it has been suggested that environmental factors might play a role in the occurrence of mesiodens. According to the dichotomy theory, Taylor argued that splitting of the tooth bud into two equal or unequal sections may either form two equal sized teeth or one normal and one dysmorphic tooth. The hyperactivity theory, which is the restricted increase in the activity of dental lamina, may be considered as the most acceptable etiologic factor in the development of mesiodens [7]. When the presence of supernumerary teeth causes adjacent teeth to erupt later than expected, there are two possible treatments: either remove the supernumerary tooth alone if there is sufficient room for permanent teeth to erupt or remove it and then use surgical-orthodontic therapy to reallocate the space for the delayed tooth. There are two school of thoughts about the timing of surgical tooth extractions. The supernumerary tooth should be extracted as soon as it is diagnosed, or it should be left in place until the neighboring teeth's roots have fully developed to avoid damaging their root apices.

In the present case, surgical extraction of supernumerary teeth was made as soon as it was diagnosed, without any damage to adjacent teeth and structures. Patient was monitored at regular intervals for the eruption of impacted permanent incisors which are in Nolla's stage VII of development. It is believed that between 54% and 75% of the delayed tooth will spontaneously erupt after 16 to 18 months. According to Smailiene *et al.*, there may be benefits to the spontaneous eruption of an impacted maxillary incisor compared to surgical-orthodontic treatment [8, 9]. The chance for a normal eruption of an impacted tooth is minimal after the root apex closes and demands for surgical orthodontic extrusion. In certain cases, orthodontic treatment is required to properly align the erupted tooth inside the dental arch.

5. CONCLUSION

With the advancements in the field of diagnostics CBCT has played a vital role in diagnosing unusual pathology more accurately enabling dentist in general to diagnose and provide successful treatment with best possible prognosis especially among paediatric patients.

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