



Research Paper

Multiple Non-Syndromic Supernumerary Teeth in an Adolescent: A Case Report

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Abstract

Supernumerary teeth are developmental anomalies characterized by the presence of additional teeth beyond the normal dental formula. While single supernumerary teeth are relatively common, the occurrence of multiple supernumerary teeth in non-syndromic individuals is rare, particularly during adolescence. This case report describes the clinical and radiographic findings of multiple supernumerary teeth in an adolescent patient, highlighting the diagnostic challenges and management considerations.

A 14-year-old adolescent presented with complaint of pain in upper right back tooth region. Clinical examination revealed supernumerary tooth adjacent to maxillary second premolar and maxillary first molar. Panoramic radiography and cone-beam computed tomography (CBCT) identified multiple impacted supernumerary teeth in both maxillary and mandibular regions, without any associated systemic condition or syndrome.

This case underscores the importance of thorough clinical and radiographic evaluation in detecting supernumerary teeth, especially in atypical presentations. Prompt management plays a crucial role in minimizing long-term functional and esthetic complications in adolescent patients.

Keywords: Supernumerary teeth, Adolescent, Non-syndromic, CBCT

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I. Introduction

Supernumerary teeth are defined as teeth exceeding the normal dental complement and may occur in both primary and permanent dentitions. This phenomenon is also known as hyperdontia and can occur in solitary or multiple form, may be unilateral or bilateral, and affect one or both arches. These teeth are more prevalent among men than women in a proportion of 2:1. The prevalence of supernumerary teeth is 0.3-0.8% in deciduous dentition and 1.5-3.5% in permanent dentition [1,2].

The etiology of the supernumerary teeth still remains unclear. "Phylogenetic process of atavism" [3], the "dichotomies of the tooth bud" [4], hereditary, and a combination of genetic and environmental factors-unified etiologic explanation have been suggested[5]. A hyperactive dental lamina is where the localized and independent hyperactivity of dental lamina is the most accepted cause for the development of the supernumerary teeth[4]. Multiple supernumerary teeth are commonly associated with syndromes such as cleidocranial dysplasia and Gardner's syndrome; however, non-syndromic occurrences are rare[5,6].

Supernumerary teeth can be classified as either supplemental or rudimentary. Supplemental teeth have morphology similar to a tooth of the normal dentition, while rudimentary teeth are small, conical, or

tuberculate. Supernumerary teeth are classified according to their position in the jaws and their morphology. Positionally, supernumerary teeth are generally classified as a mesiodens, paramolar and distomolar or distodens[7,8]. Another term, parapremolar has been used in the literature to describe a supernumerary tooth developing between or in relation to the permanent premolar teeth[9].

These additional teeth can result in complications such as delayed eruption, crowding, displacement of adjacent teeth, root resorption, and cyst formation[10]. Therefore, early diagnosis and timely intervention are therefore essential to minimize long-term functional and esthetic complications. This case report presents a rare instance of multiple supernumerary teeth in a non-syndromic adolescent and discusses its clinical management.

II. Case Presentation

A 14-year-old adolescent presented with a chief complaint of pain and tenderness in upper right back tooth region since last 15 days.

Clinical Findings

- Supernumerary tooth adjacent to right maxillary second premolar and maxillary first molar.(Figure 1)
- Deep occlusal Caries in right maxillary first molar and right mandibular first molar.



Figure 1: Clinical pictures of maxillary and mandibular arch

- No facial asymmetry
- Associated with pain and swelling

Radiographic Findings

Panoramic radiography revealed multiple impacted supernumerary teeth in both arches. (Figure 2)

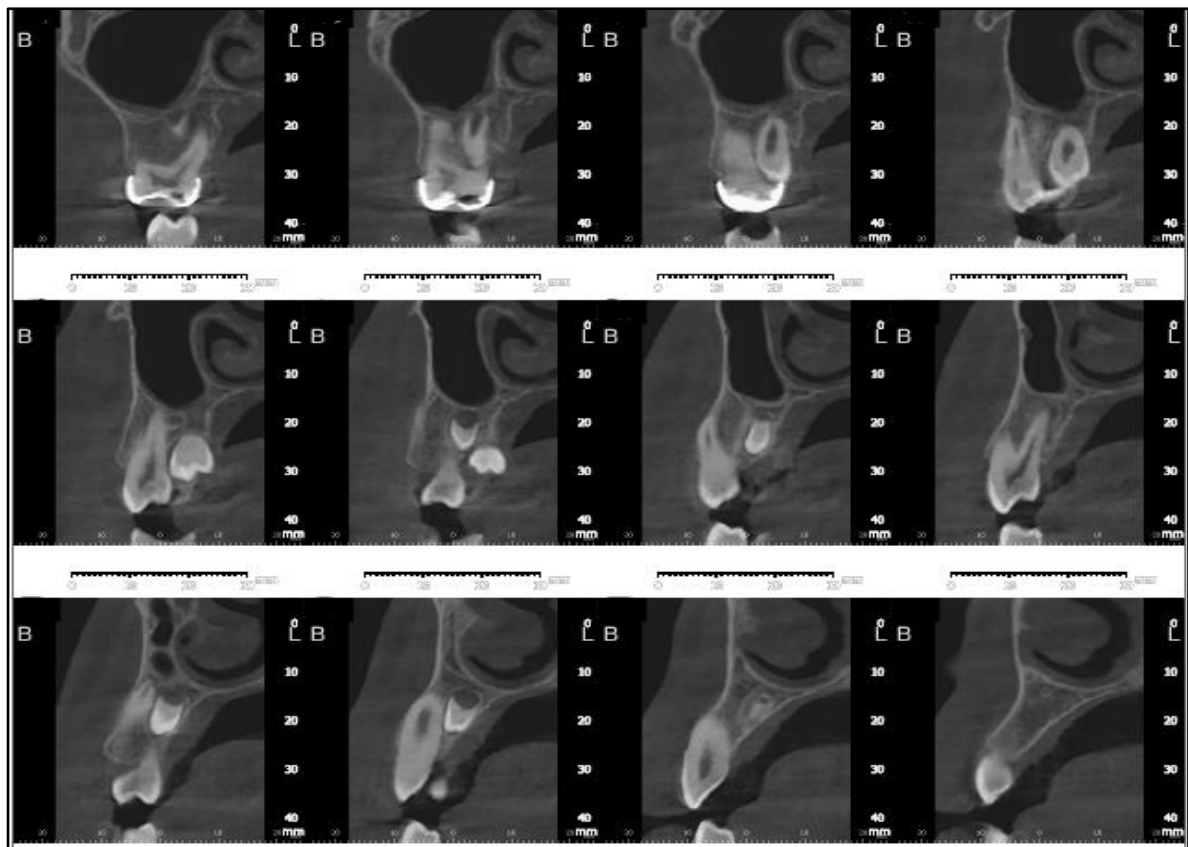
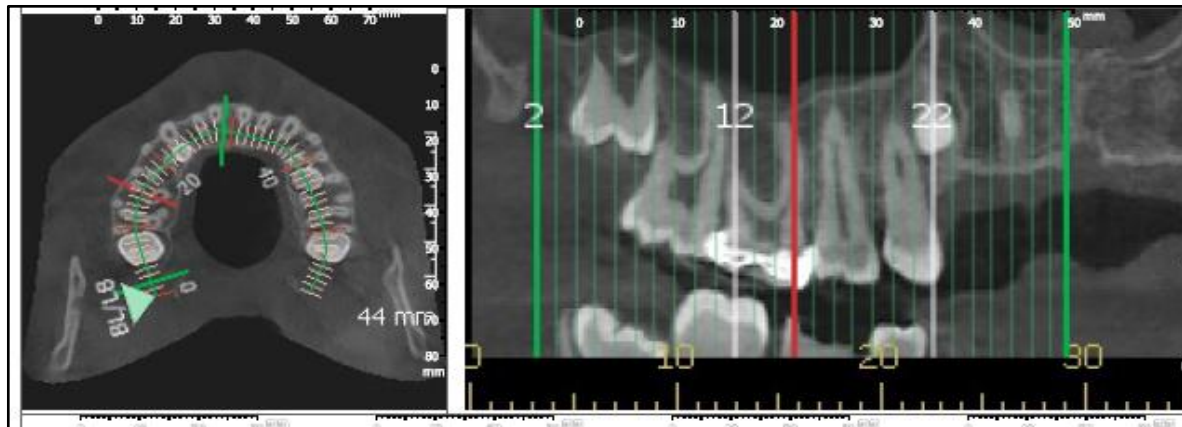
- 3 supernumerary teeth in maxillary right quadrant.
- 2 supernumerary teeth in maxillary left quadrant.
- 2 supernumerary teeth in mandibular right quadrant.
- 2 supernumerary teeth in mandibular left quadrant.



Figure 2: Panoramic Radiograph showing multiple supernumerary teeth

Further evaluation using CBCT demonstrated: (Figure 3)

- Precise location and orientation of supernumerary teeth
- Proximity to adjacent permanent teeth
- Absence of associated cystic or pathological changes.
- Proximity to maxillary sinus.



Investigations

Hemoglobin, Bleeding time, Clotting time, Random Blood Sugar

Diagnosis

Based on clinical and radiographic findings, a diagnosis of **multiple non-syndromic supernumerary teeth** was established.

Treatment

A multidisciplinary treatment plan was formulated, including:

- Surgical extraction of selected supernumerary teeth (Figure 4)

- Restoration of maxillary and mandibular first molar with Stainless Steel Crown
- Monitoring eruption of permanent teeth
- Subsequent orthodontic alignment if needed

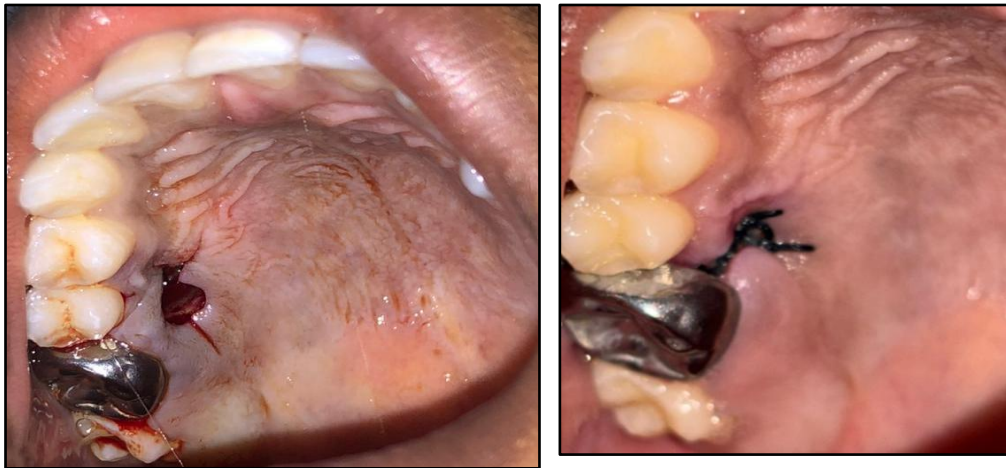


Figure 4: Immediate postoperative intraoral view showing sutures

Surgical removal was performed under local anesthesia. The crevicular incision was given and the tooth was extracted. The extracted teeth exhibited premolar like morphology, consistent with atypical supernumerary forms. (Figure 5)

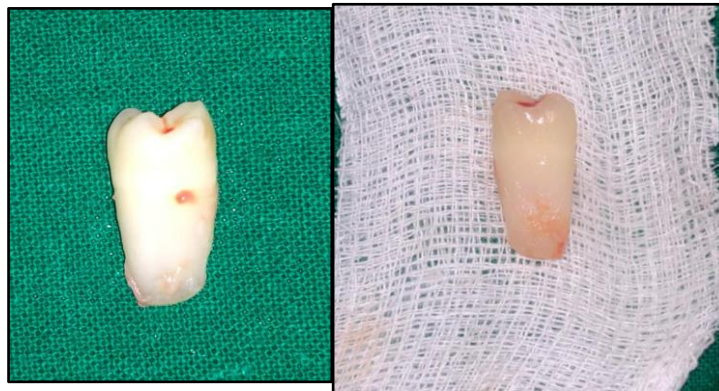


Figure 5: Extracted supernumerary tooth showing premolar like morphology

Outcome and Follow-Up (Figure 6)

- Uneventful postoperative healing
- Sutures removed after one week
- Progressive eruption of permanent teeth observed

No complications were noted during follow-up.



Figure 6: 1 week follow up showing uneventful postoperative healing

III. Discussion

The diagnosis and management of erupted supernumerary teeth are generally straightforward; however, impacted supernumerary teeth often present diagnostic and therapeutic challenges. In many cases, diagnosis is incidental, particularly when the tooth is unerupted. The positional and morphological relationship of the supernumerary tooth to adjacent structures is a critical determinant of management complexity. While conventional intraoral radiographs provide an initial assessment, advanced imaging modalities such as cone-beam computed tomography (CBCT) enable more accurate evaluation of spatial positioning and structural relationships, thereby facilitating precise treatment planning.

It has been reported that when supernumerary teeth are classified by location, they occur most frequently in the maxillary incisor region, followed by the maxillary molar region, and then the mandibular molar region[11].

Early intervention is recommended when supernumerary teeth interfere with normal eruption or alignment. Delayed treatment may result in complex malocclusion and prolonged orthodontic therapy[12,13]. In this case, timely surgical removal facilitated favorable eruption patterns and improved overall dental alignment.

Various causes have been suggested, including over-proliferation or prolonged survival of dental lamina epithelial cells and division of dental lamina, but the precise etiology is uncertain[14].

Study done by **Hajmohammadi E et al**, he examined 5000 panoramic radiographs, out of which 53 patients had a total of 68 supernumerary teeth. The prevalence of supernumerary tooth was 1.06%. According to the reports presented in the literature, the frequency of supernumerary teeth in different populations was reported between 0.5% and 5.3% in permanent tooth and between 0.2% and 0.8% in deciduous teeth. In that study, most of the supernumerary teeth were distomolar (44.1%) followed by parapremolar (29.4%) mesiodens (11.8%), lateral incisors (7.4%), paramolar (4.4%), and canine (2.9%), respectively[15].

Concomitant hypohyperdontia is a rare condition of mixed numeric variation in human dentition. Its prevalence has been reported to be 0.4% [16,17]. Furthermore as supernumerary teeth are often associated with delayed eruption or impaction of permanent teeth, early removal is recommended to facilitate the spontaneous eruption of impacted permanent teeth[18].

In one interesting study **Ashkenazi et al** demonstrated that spontaneous eruption of permanent teeth depends on various variables like apex distance of the impacted tooth relative to its final position, extent of vertical impaction, morphology of supernumerary teeth, angle of impaction relative to midline and time of surgery[19].

According to the studies, single supernumerary tooth occurred in 76% to 86% of people, double supernumerary teeth occurred in 12%–23% of people and multiple supernumerary teeth occurred in less than 1% of people[20].

IV. Conclusion

Supernumerary teeth are frequently associated with a range of complications, highlighting the importance of clinicians maintaining comprehensive knowledge of diagnostic indicators. These include delayed or failed eruption, disturbances in the eruptive sequence, diastema formation, midline deviation, and dental crowding. Prompt and accurate diagnosis is essential, as early intervention—whether surgical, orthodontic, or a combined approach—serves to minimize undesirable sequelae and safeguard the integrity of the developing dentition.

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