

# An Atypical Case of Non-Syndromic Multiple Impacted Supernumerary Teeth – A Case Report

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## ABSTRACT

**Introduction:** Multiple supernumerary teeth are often detected on radiographs. These can be asymptomatic or can result in fascial space infection, resorption of root of the adjacent tooth, malocclusions, delayed or non-eruption of teeth, temporomandibular joint disorder, cyst formation. A great challenge is management of such cases to the clinicians. Hence, correct diagnosis and treatment with the use of appropriate imaging techniques and multidisciplinary intervention are highly important.

**Case report:** A case in mandibular premolar region of an adolescent female patient is presented having multiple supernumerary teeth with non-syndromic association, which were diagnosed accidentally during routine radiographic evaluation.

**Conclusion:** Radiographic assessment has an important part to play as early diagnosis and intervention. It can help avoid orthodontic problems and dental pathology associated with supernumerary teeth.

**Keywords:** supernumerary teeth; hyperdontia; impacted teeth; radiographic images; surgical treatment

radiographic evaluation, a suitable treatment is essential.

## CASE REPORT

A chief complaint of 19-year-old female patient was pain in right lower back tooth since past few days. Familial, medical and dental history was non-significant. Extraoral examination did not reveal any abnormality. On intraoral examination, it was noted that #73, #74, #75 and #83, #84, #85 hadn't exfoliated and were still retained in the mouth well beyond their age of exfoliation. A carious lesion was present in relation to #46 which was tender on vertical percussion. To assess the extent of carious involvement, a routine intraoral periapical radiograph of the tooth was advised. The radiograph revealed the carious lesion involving dentin, close to the pulp, with an associated finding of a calcified structure that resembled the crown of a developing premolar close to the root of left mandibular first premolar. A radiolucent halo of the dental sac surrounded the calcified structure. A follow-up orthopantomograph [Fig-1] along with Cone Beam Computed Tomography (CBCT) [Fig-2] was then advised to rule out presence of other supernumeraries elsewhere in the jaws. Two premolars with developed roots along with two crowns of developing premolars lying in their respective dental sacs [Fig-3] and two canines with fully developed and dilacerated roots were observed in both left and right mandibular quadrants [Fig-4]. The patient and her mother were educated about the radiographic finding and adequately counseled. The offending first permanent molar was root canal treated. Treatment plan required interdisciplinary management involving extraction of deciduous molars and canines. It was planned to enucleate the crowns of supernumerary premolars and surgically remove the impacted canines lying beneath the roots of lower incisors as their roots were dilacerated and they were unlikely to erupt and corrected by orthodontic intervention, followed by surgical exposure of premolar crowns and orthodontic extrusion & alignment. At present, patient is under regular clinical and radiological examination.

## INTRODUCTION

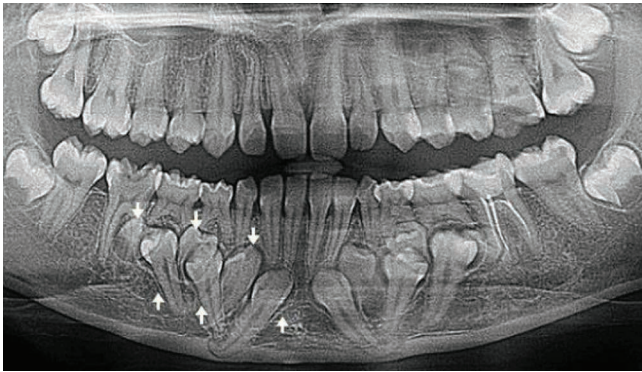
Supernumerary teeth or hyperdontia are defined as existence of an excessive number of teeth in relation to the normal dental formula (20 in the deciduous dentition and 32 in the permanent dentition).<sup>1</sup> The prevalence varies for permanent and primary dentition in various populations respectively, is 0.5- 5.3% and 0.2-0.8%.<sup>2</sup> It has been reported in permanent dentition, the prevalence of the supernumerary premolars is between 0.075-0.26% and that account for only 10% of all the supernumerary cases<sup>3</sup>; also they occur more commonly in the mandible.<sup>4</sup> Single supernumeraries occur in 76-86% of cases, double supernumeraries occur in 12-23% of the cases and multiple supernumerary teeth in less than 1% of cases.<sup>5</sup> Multiple hyperdontia can be associated with labial palatal cleft or cleidocranial dysostosis, Gardner's syndrome, Fabry-Anderson syndrome, Ehlers-Danlos syndrome. Multiple supernumerary teeth not associated with syndromes are rare, and the premolar area of the mandible is the most frequent location.<sup>4</sup> The etiology is not yet completely clear. There are several theories about occurrence of supernumerary teeth; one states that hyperactivity of the dental lamina can result from new germs splitting off the lamina and continued extension of dental lamina. Another is the dichotomy theory, hyperdontia can result from accumulations of remaining epithelium.<sup>6</sup> Other factors such as atavism and genetic association have also been cited. Their occurrence can create a variety of clinical problems, such as diastema, rotations, crowding, delayed eruption, cystic lesions, and resorption of the adjacent teeth. Hence after proper clinical and

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**Figure-1:** Orthopantomograph showing retained deciduous and impacted permanent and supernumerary teeth.



**Figure-2:** Cone Beam Computed Tomography CBCT, lingual view.



**Figure-3:** CBCT lingual view showing two premolars with developed roots along with two crowns of developing premolars.



**Figure-4:** CBCT labial view showing two canines with fully developed and dilacerated roots

## DISCUSSION

Different studies have reported a prevalence of supernumerary teeth in the permanent dentition of between 0.15% and 3.8%.<sup>7</sup> Yusof in 1990<sup>4</sup> reported that the premolar region in the lower arch is the most common place for supernumerary teeth. In a study by Rubenstein et al<sup>8</sup> the number of orthodontic patients were 1100, and the prevalence of supernumerary

premolars was 0.64%.

In the permanent dentition the male female ratio is 2:1. A male female ratio of 9:2 among 11 patients who had non-syndromic multiple supernumerary teeth was shown by Yusof.<sup>4</sup>

The best way to determine Supernumerary teeth is by clinical and radiographic examination. Generally, if there are no symptoms, these can be identified during radiographic examination by coincidence. The diagnosis is usually made as a result of a causal finding during routine panoramic X-ray studies. CBCT was used as one of the diagnostic measures as this is a recent technology which has revolutionized maxillofacial imaging. It provides high contrast 3D image as well advantage of image reconstruction for better treatment planning.

Multiple complications occur with the development of supernumerary teeth such as functional impairment, malalignment of teeth, and an unaesthetic appearance. Failure of teeth to erupt, delayed eruption and ectopic eruption, displacement, diastema, concrescence, dilacerations, pathological fractures, loss of pulp vitality, cyst formation and root resorption may also occur. Bodin et al<sup>9</sup> have reported that only 2% of the supernumerary premolars are likely to undergo pathological changes.

The position and clinical manifestations of the supernumerary tooth may determine treatment. Thus, an early diagnosis is crucial for deciding among extraction, extraction followed by orthodontic treatment, or simply monitoring of the supernumerary teeth, to minimize the risk of complications. If these teeth are linked with any pathological formation or when they disturb the eruption, or result in malpositioning of the permanent teeth, they should be removed as soon as possible. However regular clinical and radiographic monitoring should be made if the risks of surgery outweigh the benefits of removal. Asymptomatic supernumerary premolar teeth should be left *in situ* until development of the adjacent anatomic structures and root development of the adjacent teeth.<sup>10</sup>

An incidental finding in this case was the presence of the supernumerary teeth and the patient was completely asymptomatic. As the impacted supernumeraries were not associated with any cyst formation or resorption of the adjacent teeth, it was decided to extract deciduous teeth observe the permanent teeth and to erupt spontaneously, else go for orthodontic treatment and radiographically review the patient.

## CONCLUSION

Hyperdontia or multiple supernumerary teeth without association with complex syndroms is infrequent and is normally asymptomatic, usually diagnosed as a casual finding during routine panoramic X-ray studies. Management of such a condition requires a multidisciplinary approach involving surgical and orthodontic intervention. Presence of four supernumerary premolars and two canines makes this case unusual and rare.

## ABBREVIATIONS

Cone beam computed tomography(CBCT)

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