

RESEARCH ARTICLE

A CASE REPORT OF A RARE ODONTO-STOMATOLOGIC ANOMALY- MAXILLARY PARAPREMOLAR

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Manuscript Info

Abstract

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*Key words:-*Supernumerary Teeth, Odontostomatologic, Parapremolar Supernumerary teeth may be defined as the increased number of teeth present in the upper or lower arch which can be single or multiple and they can be erupted or unerupted with the prevalence of 0.1-3.4%. This abnormality occurs due to many etiological factors like genetic, systemic and local factors. In contrast to mesiodens and distomolar; parapremolar occur less commonly. Their appearance is same as premolars and occur frequently in the mandibular premolar region. In the present case report a rare odontostomatologic anomaly of an erupted parapremolar in maxillary region is discussed which is located palatal to 25. Its treatment depends on the clinical condition.

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Introduction:-

Supernumerary teeth are odontostomatologic anomaly characterized by the existence of excessive number of teeth in relation to the normal dental formula⁽¹⁾. They may be defined as any teeth or tooth substances in excess of the usual configuration of 20 deciduous and 32 permanent teeth. This phenomenon is also known as hyperdontia⁽²⁾.

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Supernumerary teeth can be single or multiple, unilateral or bilateral, erupted or unerupted and can be seen in one or in both jaws⁽²⁾.

Genetics, systemic and local factors play a very important role in the process of growth and development of the supernumerary tooth ⁽³⁾. Several theories like, atavism, genetic factors, local hyperactivity of dental lamina and

Corresponding Author:-Dr. Shikha Sharma Address:-Department of Pediatric and Preventive Dentistry, Himachal Institute of Dental Sciences, Paonta Sahib, Himachal Pradesh. disturbances during tooth development have been proposed ⁽⁴⁾. This abnormality of hyperdontia can be seen in primary or permanent dentition.

Parapremolars are supernumerary teethfound in addition to normal dentition and are situated near the premolars. They may be found as single or multiple supernumerary teeth.Parapremolars are more frequently present near the mandibular premolars⁽⁵⁾.

Fusion can be defined as the two embryologically developing teeth joined together by dentinal union. Incidence of fusion is 0.5% and is usually associated with the primary dentition.

The prevalence range of supernumerary teeth with 0.1-3.4% are frequently seen in permanent dentition. Males are more frequently affected as compared to females with respect to permanent dentition⁽⁶⁾. Supernumerary teeth are rarely present in the primary dentition with incidence of 0.3% to 1.7% of the population⁽⁷⁾.

A classification of numeric dental anomalies has been given by Tomes [1873] which is as follows(8);

- 1. Supplemental tooth: same form and function of adjacent teeth with no anatomical differences.
- 2. Supernumerary tooth: an atypical anatomic form; often these teeth are smaller than normal.

Another classification given by Bush[1897] described the different morphology of supernumerary teeth as following⁽⁸⁾:

- 1. Conic: tooth of a small volume and conic form, its root is short and palatine.
- 2. Tuberculate: tooth with several cusps. Its root is short and hooked.
- 3. Infundibuliform: tooth with a funnel form. Its root is short and conic.

Scheiner and Sampson (1997) classified the supernumerary teeth according to their location and position⁽⁹⁾:

- 1. Mesiodens : located between maxillary CI
- 2. Paramolar: located near molars
- 3. Distomolar: located distal to molars
- 4. Parapremolars : located adjacent to a premolar

Syndromes are also associated with the numeric dental anomaly. Apert syndrome, Cleidocranial dysplasia, Gardner syndrome, Down syndrome, Crouzon disease, Sturge-Weber syndrome, Oral-facial-digital syndrome, Hallermann-Streiff syndrome⁽²⁾.

This case report shows the presence of a non-syndromic supernumerary parapremolar tooth located palatal to upper 2^{nd} left premolar. Its morphology resembles two fused canines.

Case Report

A 16-year-old male patient, reported to the Department of Pediatric and Preventive Dentistry, at Himachal Institute of dental Sciences, Paonta Sahib, Himachal Pradesh- with a chief complaint of food lodgment and pain in the upper left side of the mouth from 2-3 months. The intraoral examination showed an erupted supernumerary parapremolar tooth, located palatal toupper left 2nd premolar(fig-1).

Soft tissue examination revealed inflammation in the surrounding periodontium between maxillary left second premolar and the supernumerary tooth. Clinical examination showed Grade 1 mobility w.r.t to supernumerary toothplaced palatal to upper 2ndleft premolar. In upper left region of mouth RVG was done for 23, 24, 25 regions(fig-2). Radiographic examination revealed the increased radio opacity in relation to coronal portion of 24 and 25 due to the superimposition of image of supernumerary tooth.CBCT(Cone Beam Computed Tomography) was advisedbut, due to financial constraints, the patient was not ready for the same. OPG was done which confirmed the presence of supernumerary parapremolar tooth (fig-3).

The medical history of the patient was insignificant. The treatment plan included removal of supernumerary tooth after taking parent consent. Local anesthesia (Infraorbital nerve block, nasopalatine nerve block and intraligamentary anesthesia) was administered. The extracted tooth was cleaned, disinfected and analyzed(fig-4).

The tooth showed the morphology of two fused canines(fig-5). Hemostasis was achieved. Postsurgical instructions were given to the patient and he was kept on antibiotic coverage. Patient was instructed to keep a good oral hygiene using a soft toothbrush and chlorhexidine mouthwash once daily for 1 week. Although, Orthodontic treatment was advised to facilitate the correction and alignment of upper and lower teeth but the patient was not willing for the same.



Fig 1:-Presence of supernumerary teeth.



Fig 2:- The periapical view showing position of the supernumeraries.



Fig 3:- OPG showing supernumerary tooth w r t 25.



Fig 4:- Postoperative view after parapremolar extraction.



Fig 5:- Extracted supernumerary teeth.

Discussion:-

The case discussed above represent a small sample of the possible presentations for case involving supernumerary teeth. Before definitive diagnosis and treatment planning, enumerate and identify the present teeth in both the arches.

Etiology of supernumerary teeth is not exactly known. Genetics and environmental factors play an important role. Genetic studies identified mutations in genes such as Msh Homeobox1 (MSX1), paired Box9 (PAX9), and Axis inhibition protein 2 (AXIN2) may contribute to the development of supernumerary teeth(4).

Anomalies of teeth occur during morphogenesis may be due to defects caused by the genetic disturbances or environmental factors. The most favorable hypothesis is the excessive growth of the dental lamina, which can be proposed as being responsible for the additional tooth germs formation. According to this theory, lingual extension of an additional tooth bud leads to a eumorphic tooth, while rudimentary form arises from proliferation of epithelial remnants of the dentinal lamina induced by the pressure of complete dentition. However, combinations of genetic and environmental factors for the occurrence of Supernumerary tooth may be responsible. (9).

Parapremolars are the extra teeth present near the premolar region and usually belonging to the premolar group. Older than 12 years group of patients are usually detected with the supernumerary teeth. They can be single, multiple, unilateral or bilateral.

The prevalence of supernumerary teeth varies from 0.1 to 3.8 % of the populations studied. Whereas the prevalence of Parapremolars varies between 0.09% and 0.76% and from all the supernumerary teeth, 8-10% are reported. They are more common in males than in females. Supernumerary teeth are 8.2-10 times more frequently found in the lower arch as compared to maxillary arch. Mesiodens is the most generally found supernumerary teeth in the midline of the maxilla. Another location where the supernumerary teeth can be present is the palatal area of

maxillary incisors, mandibular premolar region (parapremolar), buccal area of molar (paramolar), and distal area of the 3rd molar (distomolar).

Lutenstudied the prevalence of supernumerary teeth in the primary and permanent dentitions of 1558 children and found a prevalence of 2 per cent. The bitewing and periapical radiographs were used for the detection(7).

Archna Rani et al. (2017) reported the prevalence of supernumerary teeth in north Indians population to be 0.8%. The prevalence of mesiodens was0.2%, paramolar was 0.1%, distomolar was 0.4%, and parapremolar was in 0.1%(9).

Among 82 identified supernumeraries, Pulkit Khandelwal noted highest incidence of parapremolar (39.02%) and conical morphology (46.35%). The most common position of eruption was normal (68.30%) and most of these 82 teeth were erupted in oral cavity (57.31%). These supernumerary teeth have led to various endodontic, orthodontic, periodontal, and other complications in the studied population(10).Harris and Clark(11) reported premolars as the second most common supernumerary teeth after distomolars.

Charan kk dharmani et al. (2018) conducted a study and reported the prevalence of supernumerary tooth to be 0.9%. Males were affected more as compared to females with a ratio of 2.3:1(12).

Mitchell and Bennett(13) have suggested that different types of supernumeraries have been associated with different effects on the adjacent dentition. Foster and Taylor(14) examined this relationship and found tuberculate types more commonly produced delayed eruption, whereas conical types more commonly produced displacement of the adjacent dentition.

Supernumerary teeth have an impact on the developing dentition. There may be no effect or either a chance of radiographic finding or following their eruption. Crowding can be seen due to an increased number of erupted teeth(1). The supernumerary or adjacent teeth's displacement or their ectopic eruption is common.Diastema, root resorption of adjacent teeth, malformation of adjacent teeth such as dilacerations, and loss of vitality of adjacent teeth, usually can be seen with the supernumerary teeth.

Treatment plan for supernumerary teeth is different according to the variations in the case. Extraction alone or extraction followed by the orthodontic treatment can be done for the good oral hygiene(4). Extraction of supernumerary tooth should be done carefully without damaging the surrounding structures and roots of the adjacent teeth. In the present case, extraction followed by orthodontic treatment was planned because patient had periodontal problems around the supernumerary teeth.

In this present case, rare anomaly of a parapremolar of twofused supernumerary canines was present palatalto the upper left second premolar.

Conclusion:-

Every case is a new case and treatment for the supernumerary teeth should be according to the situation. For precise treatment, diagnosis should be accurate. There are many clinical problems associated with the presence of supernumerary teeth, such as caries in adjacent teeth, resorption of roots of adjacent teeth, development of cyst, malocclusion and food impaction as observed in our case.

Surgical intervention is the appropriate treatment modality for supernumerary teeth.

However, impacted supernumerary teeth that are asymptomatic and do not affect the dentition, should be kept on follow up rather being removed. Clinical examination and radiographic examination play an important role for the treatment of every case.

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