

Nonsyndromic Paired Incisive Jumeaux : Diagnosis and Management

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ABSTRACT

Supplemental teeth are supernumerary teeth that may cause esthetic problems, delayed eruption and crowding, and they require early diagnosis and treatment to prevent complications. The case reported here is one of bilateral supplemental central incisors teeth, all of them with normal morphology. The presence of these paired “Jumeaux” led to the labial displacement and rotations of the anterior maxillary teeth. The treatment reviews protocol to prompt and efficient diagnosis, extraction of the supernumerary teeth and a referral for orthodontic management of the crowding, displacement and rotations.

KEYWORDS: Bilateral supplemental, Maxillary central incisor, Supernumerary

INTRODUCTION

More than a century ago Tomes described supplemental tooth for the first time, as one tooth more than the series and resembling the typical in form and function. Ashkenazi et al. described them as “superlative.” Supplemental teeth are eumorphic and mostly occur in the anterior maxilla with a predilection towards males.^{1,2}

The etiology of supernumerary teeth is unclear. Initially, Oeclers, in 1952, suggested atavism forms supernumerary teeth. Gardiner in 1961 suggested that supernumerary teeth are formed from the tooth bud by full, equal split resulting in two supplemental forms. An unequal split otherwise results in one normal tooth and one supernumerary form. The theory was not acceptable because if a permanent tooth bud breaks during the initial tooth formation, the stage of development of the resultant supernumerary tooth should be almost the same as the corresponding regular tooth.³ The most acceptable theory is hyperactivity of dental lamina. According to this theory, a supplemental tooth develops as the lingual extension of an accessory tooth bud.^{1,4}

Though supernumeraries may remain in the same position for years without causing any pathology. Complications may arise when these teeth fail to erupt leading to diastema, rotation, displacement and ectopic eruption of the permanent teeth causing malocclusion. Frequently involved sites of their occurrence are maxillary lateral incisor(50percent) followed by mesiodens(36 percent), maxillary central incisor(11percent) and less commonly are seen with premolars(3percent).^{2,5}

The case presented here shows nonsyndromic bilateral supplemental permanent maxillary central incisors that caused a diagnostic dilemma in the identification of permanent maxillary central incisors.

CASE REPORT

A 12-year-old Boy reported to the Department of Pedodontics and Preventive Dentistry at the Department of Pedodontics, Sudha Rustagi Dental College and Hospital, Faridabad with a complaint of unaesthetic extra maxillary front teeth of about six years duration. The family and medical histories were non-contributory. General examination was within standard limits. On intraoral examination, a pair of supplemental teeth was observed with morphology similar to that of permanent maxillary central incisors in the first and second quadrant. One pair of central incisor was oriented in the midline, and another was displaced in the respected quadrant. Among these, the right central incisor was rotated distally and left central incisor was displaced labially. (figure1a,b,c)



Fig 1a:Frontal Profile. 1b:Intra-oral occlusion. 1c: Maxillary arch view

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An orthopantomogram (OPG) was taken which revealed normal root configuration with sound periodontium around the pair of maxillary incisor situated in the midline. The crown and root morphology of this pair was identical with the other maxillary central incisors present. (figure2)



Fig 2: OPG

The morphological similarity of the erupted incisors was a diagnostic dilemma for the identification of supplemental teeth from normal teeth. Their management, therefore, required accurate identification and positioning of these teeth. We took Hydrocolloid Impression of maxillary and mandibular arch forms to prepare the diagnostic models for the evaluation of the malalignment and positioning of the erupted supplemental teeth. Cone-beam computed tomography was used to assess supplemental supernumerary. This technique yielded detailed three-dimensional images of local structures and proved useful in pre-treatment evaluation of supernumerary teeth and surrounding structure (figure3).

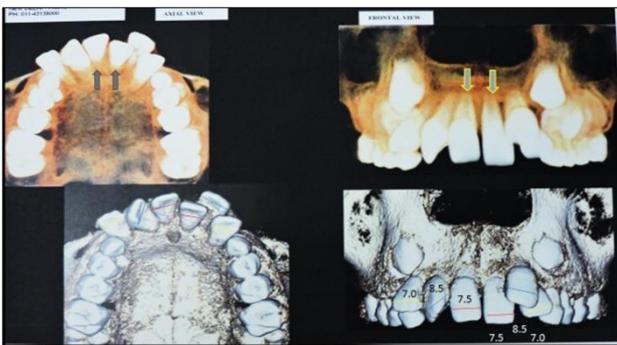


Fig 3: CT Scan

With a careful model analysis for the tooth material, size, and space; supplemental teeth was identified and planned for extraction. It was then followed by orthodontic management to achieve normal alignment.



Fig 4a: Nance Palatal arch with crib. 4b: Lingual Arch



Fig 5: Bracket placement with 11,21 with elastic chain.



Fig 6: Fixed Orthodontics

DISCUSSION

Hyperdontia or supernumerary is defined as any teeth more than the usual number of deciduous or permanent teeth.⁹ It is either eumorphic or dysmorphic. A eumorphic/supplemental supernumerary tooth has the same morphology as a normal tooth while dysmorphic teeth are small and conical or tuberculate.⁶ Most of the previous literature has quoted the bilateral presence of the supplemental form as seen in the present case.¹⁰

Only 4.1% of the maxillary incisor supernumeraries were normal in size and shape to be considered supplemental. The percentage of supplemental teeth observed in another study was 6.9%.² While supernumeraries that erupt either buccally or lingually of the arch are referred to as peridens, in the present case the paired mesiodens had a supplemental form.¹¹

The supplemental teeth are commonly associated with various syndromes like cleft lip and palate, cleidocranial dysostosis, and Gardner's syndrome to name a few.¹² Earlier Yusof reported that the nonsyndromic supernumerary are mostly associated in the premolar region of the mandible, and anterior maxilla was an unusual site for their occurrence, this was in contradiction to the present case with the supplemental being localised in the midline of upper arch.^{4,13} The presence of nonsyndromic supplemental incisor was further supported by Eigbobo et al. and Tangade et al.^{5,14}

Supernumerary teeth of the maxillary anterior region can cause aesthetic concerns, therefore early detection and comprehensive planning can minimize the complications.¹⁵ These complications which are routinely encountered with the presence of supplemental tooth includes widening of follicular space, the formation of a

dentigerous cyst, necrosis of dental pulp, obliteration of root canal, resorption of root and ankyloses. Unlike the present case, the supplemental teeth was fully erupted, asymptomatic and occupied the place of maxillary central incisor.

In the present case, supplemental maxillary incisor had a direct resemblance to the regular series with a well-formed crown and was morphologically similar, both clinically and radiographically except for its incomplete root completion. Detecting between a normal tooth and its supplemental “eqionux” was, therefore, difficult. Earlier literature was suggestive of the new teeth exhibiting morphological variations like deep palatal pits and coronal invaginations, to differentiate them from the normal tooth in series.⁹ Interestingly, in our case, both these features stood irrelevantly. Nor was any genetic correlation evident, like autosomal recessive inheritance as the siblings did not report with any supernumerary teeth.^{6,16}

Shah reviewed, most of the natural teeth had dimensions larger than those of supernumerary maxillary incisor teeth. This differences they reported was significant for the mesiodistal crown sizes of the maxillary anteriors.¹ Later, Dhawan et al.⁹ suggested; the tooth with minimum measurement may be considered for extraction, this was similar to our case. Also, if supernumerary teeth are likely to interfere with orthodontic tooth movement, they should be removed before the commencement of treatment. Though the decision support system was unfavorable in this case regarding the position of permanent central, the significance of mesiodistal dimensions remains utmost priorities for the preservation of future aesthetics.

In our patient, the presence of supplemental tooth leads to the ectopic eruption of permanent central incisor causing maxillary crowding, disturbance in the arrangement of the cyclops. Thus it was decided to extract the supplemental followed by corrective orthodontics.

The importance of CT scan in this regards cannot be overemphasized.⁸ The bone support, the status of the adjacent tooth, permanent tooth and supplemental can be assessed along with interpretation of the tooth alignment and root formation stage. In the present case, position, the mesiodistal dimension of all four central incisors were verified, and tooth size material was correlated with the diagnostic cast to achieve the diagnosis of supplemental teeth.

Mostly the parental anxiety is allayed after discussion and awareness of complication. The parents were apprehensive as they considered the natural teeth as the ones causing malalignment and wanted extraction. In present case, prior to extraction, the consent was taken after achieving an understanding.

CONCLUSION

The clinical management of multiple supernumerary teeth poses a great challenge to clinicians. The clinician should

clearly identify the supplemental teeth and complication associated with the case; early intervention is the key to efficient management in the form of surgical or orthodontic treatment and combination to minimize unwanted side effects to developing dentition.

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