

“Mesiodentes-A Common Supernumerary in a Unique Appearance”: A Case Report and Literature Review

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ABSTRACT

Mesiodens is the most common form of supernumerary teeth. When mesiodens erupt in multiples, either labial or palatal to permanent central incisor, it presents a rare condition “Mesiodentes”. This case report demonstrates the presence of erupted double mesiodens giving an unaesthetic appearance in a non-syndromic 10-year-old male patient.

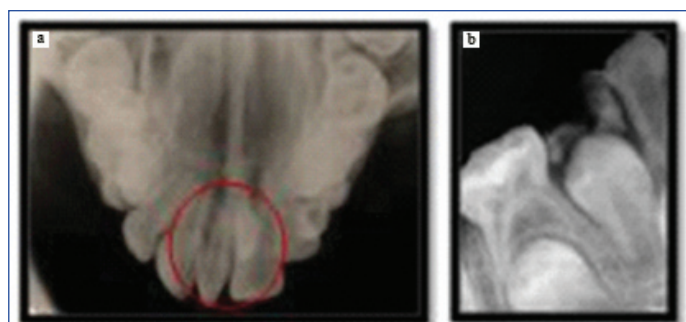
CASE REPORT

A 10-year-old healthy male reported with the chief complaint of extra teeth in his upper front region of the jaw since three years. Patient desired for extraction of ‘extra teeth’, due to unaesthetic appearance and poor oral hygiene maintenance. Patient has not taken any previous dental treatment for the same and no significant medical history was found. On examination, patient was found normal without any syndromic characters and a mixed dentition period with the presence of two erupted supernumerary teeth in premaxillary region were noted. Among them one was located between #11 and #21 and other was palatal to #21. Other findings included poor oral hygiene with generalised stains and calculus deposition, Angle’s Class I malocclusion with rotated #11 and #22 and midline diastema, dental caries w.r.t #54, #55 and #85 along with root stump w.r.t #84 [Table/Fig-1 a-c].

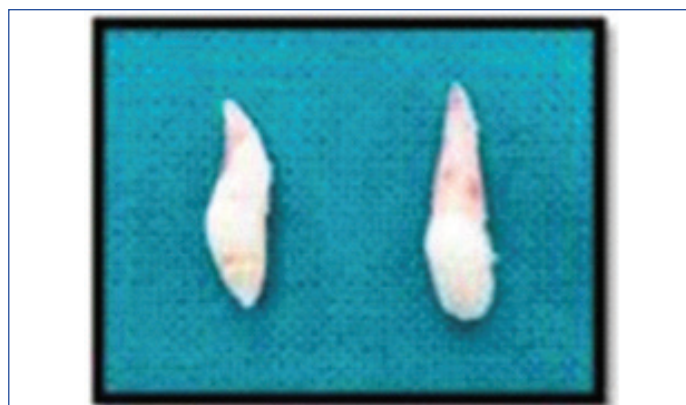
A maxillary occlusal radiograph on investigation revealed the presence of two erupted supernumerary teeth in maxillary anterior teeth region. Diagnosis of double mesiodens/mesiodentes in the maxillary anterior teeth region was made. Both the mesiodens were of conical variety, vertically oriented and smaller in dimension as compared to the adjacent normal teeth. The mesiodens located between #11 and #21 showed well-formed root, however a shorter root was noticed w.r.t mesiodens palatal to #21 [Table/Fig-2a]. A Radiovisiograph (RVG) w.r.t #84 showed resorbed roots and erupting mandibular right first premolar #44 [Table/Fig-2b].

Patient was cooperative with Frankl behaviour rating III scale. Treatment plan was explained to the patient and parents. He underwent an ultrasonic scaling with oral hygiene instructions, glass ionomer cement restoration done w.r.t #54, #55 and #85. On the basis of clinical and radiographic findings, the root stump w.r.t #84 was advised for extraction. Both the mesiodens and root stump w.r.t #84 were extracted (intra-alveolar extraction method) under local anaesthetic infiltration by using 2% lignocaine with adrenaline hydrochloride and post-operative instructions were given [Table/Fig-3]. After one week follow-up, the extraction socket showed satisfactory healing [Table/Fig-4]. Although a fixed orthodontic treatment was advised to the patient for proper alignment of

maxillary anterior teeth, patient did not report back for the further treatment procedure.



[Table/Fig-2]: a) Maxillary occlusal radiograph showing mesiodentes. b) RVG showing root stump w.r.t #84 and erupting #44.



[Table/Fig-3]: Extracted mesiodentes.



[Table/Fig-4]: Intraoral view after one week follow-up.



[Table/Fig-1]: a) In occlusion with the presence of mesiodentes. b) Maxillary arch showing mesiodentes, one between #11 and #21 and one palatal to #21. c) Mandibular arch showing root stump w.r.t #84.

DISCUSSION

"Supernumerary teeth are those which are in excess of the normal set of dentition" [1]. Their first report emerged between AD 23 and 79 [1]. In different population, their prevalence ranged from 0.1-3.6% with males affected more than females (2:1) and among them mesiodens comprise of approximately one third cases [2]. In Indian population, the incidence is 87% with single, 12% with two while 1% with multiple supernumerary teeth. Mesiodens is the most common form of supernumerary tooth [2].

The word mesiodens was given by Balk (1917) to specify a supernumerary tooth present between central incisors in the premaxillary region. It is found more frequently in the permanent teeth (0.1-3.6%) than primary teeth (0.02-1.9%) [1]. They are usually found as singles however, its multiple occurrence is called as "mesiodentes" which could be either labial or palatal to permanent central incisors [3-6]. They are generally small, with conical morphology and a short root, appearing single, double, erupted or even unerupted [2]. The present case reported the presence of mesiodentes in anterior maxillary region and its associated dental abnormalities in a non syndromic 10-year-old child.

Mesiodens accounts for 30% incidence of all supernumerary teeth [6]. Three controversial theories had been proposed concerning the presence of mesiodens. The first is atavistic theory, which suggested that phylogenetic recapitulation of our precursors with three central incisors give rise to mesiodens [7], while according to dichotomy theory; asymmetrical splitting of tooth bud produce two teeth regions which results in mesiodens formation. The third and widely accepted theory put forward the hyperactivity of dental lamina where the remnants of dental lamina are developed into an extra tooth bud [8]. Moreover, the presence of the several foramina and canals in the pre maxillary region along with complex system of joining of numerous bony processes give rise to the developing tooth

buds more prone to division in this region [9]. This is in agreement with literature review done by Meighani P where 80-90% of all supernumerary teeth were noticed in the maxilla [10], additionally Von Arx T observed that majority of supernumerary teeth found palatal to the central incisors [11].

The presence of mesiodens in the midline may change the appearance and occlusion by varying the path and position of the eruption of permanent central incisors [3]. The reported case was unique eruption of double mesiodens in a non syndromic healthy 10-year-old male child where one was located between two permanent maxillary central incisors and other was palatal to maxillary left central incisor resulting in an unaesthetic appearance due to midline diastema, rotation of maxillary right permanent central incisor and left lateral incisor and poor oral hygiene. As it is well known fact that mesiodens are twice more common in males than females [2], similarly most of the mesiodens in the case studies listed in [Table/Fig-5] as well as in the present case were found in a male patient. Various case studies have reported the presence of erupted mesiodentes [Table/Fig-5] [2-6,12-20], in contrary Gharote HP et al., and Canoglu E et al., noticed the presence of inverted and unerupted/impacted mesiodens in their studies [5,21]. Almost all the cases of mesiodentes reported in various studies were conical in shape and the present case followed the same pattern. However, Gharote HP et al., and Manne R et al., noted a tuberculate type mesiodens [5,17], while Villavicencio J et al., and Hundal KD et al., observed a molariform variety as well [18,19]. Majority of mesiodentes reported in various studies as well in the present study were two in number, although Gharote HP et al., and Kulkarni VK et al., even found three and four mesiodentes respectively [5,13]. Taking into consideration the patient's age and complications associated with the mesiodentes (unaesthetic appearance and psycho social problems), extraction was the treatment of choice in this reported case.

Author	Year	Age (Yrs)/Sex	Variety/Type	Number	Location
Marya CM et al., [12]	1998	12/M	Conical	Two	Between #11 and #21
Kulkarni VK et al., [13]	2010	12/M	1 Conical, 3 Supplemental	Four	Between #12 and #21
Bali N et al., [14]	2010	13/M	Conical	Two	Palatal to #11 and #21
Karthik V et al., [2]	2011	13/M	Conical	Two	Palatal to #11 and #21
Gharote HP et al., [5], out of six reported cases, erupted mesiodentes in three cases.	2011	26/M	Conical, Supplemental	Two	Palatal to #11 and #21
		12/M	Conical, Tuberculate	Three	One between #11 and #21, one palatal to first mesiodens and one fused to #11.
		24/M	Tuberculate	Two	Palatal to #11 and #21
Reddy M et al., [15]	2013	14/M	Conical	Two	Both labially placed to #11 and #21
Nagrathna C et al., [16]	2014	4/M	Conical	Two	One between #52 and #61 and other palatal to #61
Singaraju GS et al., [6]	2015	23/M	Conical	Two	Between #11 and #21
Asha ML et al., [4]	2015	10/M	Conical	Two	Between #11 and #21
Manne R et al., [17]	2015	25/M	1 Tuberculate,	Two	Between #11 and #21
			1 Conical		Palatal to first mesiodens.
Villavicencio J et al., [18] (Three cases)	2015	11/M	Supplemental	Two	Between #11 and #21
		10/M	Molariform	Two	Between #12 and #22
		9/M	Conical	Two	Between #11 and #21
Hundal KD et al., [19]	2016	10/F	1 Conical,	Two	Palatal to #11
			1 Molariform		Palatal to #21
Sujlana A et al., [20]	2017	8/M	Conical	Two	Between #52 and #62
Krishnamurthy NH et al., [1]	2017	13/M	Conical	Two	Between #11 and #21
Srinivasan S et al., [3]	2017	12/M	Conical	Two	Palatal to #11 and #21

[Table/Fig-5]: A review reporting the presence of erupted mesiodentes with respect to their type, number and location [1-6,12-20].

CONCLUSION

This case report demonstrates the presence of mesiodens in a unique multiple appearance as mesiodentes in the pre-maxillary region causing malpositioning of the permanent maxillary incisors and aesthetic concern for the patient. Early diagnosis and timely extraction of the mesiodentes is essential to prevent further malalignment and facilitate early orthodontic intervention of the developing malocclusion which ultimately enhances the quality of life and self-confidence of the patient.

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