

## Case Report

### Twin Mesiodens in Maxilla: A rare Radiographic finding

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#### ABSTRACT

Mesiodens is a supernumerary tooth present in the midline of maxilla, between central incisors. Mesiodens is the most commonly found supernumerary teeth. These mesiodens cause many complications, such as midline diastema, displacement, rotation, root resorption, unpleasing esthetics, and cyst formation. In the present cases, mesiodens is found in the anterior maxilla with twinning which is very rare in occurrence.

**Keywords:** Mesiodens, Twins, Supernumerary tooth, Midline diastema.

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#### INTRODUCTION

The deviation in number from normal complement set of teeth is called as "hyperdontia." The extra tooth or teeth is/are described as supernumerary tooth or teeth, which may occur in different forms (conical, tuberculate, supplemental and odontomas),<sup>1</sup> locations (mesiodens, paramolar and distomolar)<sup>2</sup> and shapes, (supplemental/eumorphic and rudimentary/dysmorphic).<sup>2</sup> Mesiodens is the most common form of supernumerary teeth and accounts for 30% incidence.<sup>3</sup> They are usually miniature in form with a conical shaped crown and blunt root. Thus, they represent a deviation both in number and shape of the teeth. The prevalence of supernumerary teeth is reported to be 0.1-3.6%, with higher incidence rate in males than females (incidence ratio of 2:1) and commonly observed with permanent dentition when compared with deciduous dentition.<sup>4,5</sup> Mesiodens usually occur in singlet's and their occurrence in multiples is referred to as mesiodentes.<sup>6</sup>

#### CASE REPORT

A 18 years old, male reported to the department of Oral Medicine and Radiology of Yamuna Institute of Dental Sciences and Research, Yamunanagar with the chief complaint of irregular teeth in upper front region of mouth since childhood. Patient is facing esthetic issues while smiling. No other history of present illness was reported by the patient. Patient's medical and dental history was non contributory. Family history revealed no similar problem in other family members.

Extraoral examination revealed no signs of syndromic involvement. Intraoral examination revealed Angles class I molar relation with crowding in maxillary anterior region with presence of rotated malformed Central Incisor in 11 region.

Radiographic investigation (Photograph 1) revealed presence of impacted 11 and one supernumerary teeth which was conical in shape and inverted in direction. Malformed tooth present in 11 region showed conical root. All the three teeth showed complete root formation. So, a radiographic diagnosis of twin mesiodens was given.



**Photograph 1: IOPA radiograph showing twin mesiodens and impacted 11 ( Yellow: Impacted 11, Red: Inverted Supernumerary tooth and Blue: Erupted Supernumerary tooth)**

## DISCUSSION

The most common supernumerary tooth which appears in the maxillary midline is called a mesiodens. However, very little literature is available on cases of twinning of mesiodens as they do not occur frequently.<sup>5</sup>

A mesiodens is a supernumerary tooth located in the maxillary central incisor region; the overall prevalence of mesiodentes is between 0.15% and 1.9%. Mesiodens can occur individually or as multiples (mesiodentes), may appear unilaterally or bilaterally, and often do not erupt. Mesiodentes can significantly alter both occlusion and appearance by altering the eruption path and the position of the permanent incisors.<sup>1</sup>

The etiology of mesiodens remains unknown although different theories are formulated. The first theory of atavism (phylogenetic reversion) is widely rejected because of the ectopic development, solitary occurrence, secondary eruption to the central incisors, and dysmorphic shape. A possible etiological explanation may be the dichotomy theory with splitting of the tooth bud resulting in two teeth both resembling normal teeth, or resulting in two different teeth with one normal and one dysmorphic. The most widely accepted hyperactivity theory states that locally induced hyperactivity of the dental lamina results in supernumerary teeth, with the lingual extension of an additional bud leading to a eumorphic mesiodens, while the rudimentary-shaped tooth arises from the proliferation of epithelial remnants of the dental lamina. The last theory includes the combination of genetic and environmental factors in human odontogenesis as dynamic interactions. Familial occurrence of mesiodens is reported to involve more than one sibling or one generation. Sedano and Gorlin suggested an autosomal dominant trait with lack of penetrance in some generations and even an X-linked inheritance was suggested because of sex

predominance of males over females. A recent report on three siblings with cleidocranial dysplasia syndrome and supernumerary teeth suggests that the involvement of nongenetic or epigenetic regulation mechanisms in the formation of these supernumerary teeth.<sup>6</sup>

Whittington *et al*, has said that the sooner the diagnosis the better the prognosis. The clinician's knowledge of common anomalies and their location in the primary and mixed dentition will result in early diagnosis and may consequently prevent further complications. The diagnosis may be possible as early as age 2 years, and onward, as recommended by some authors.<sup>7</sup> In case of asymmetry, mesiodens should be suspected. It is also probable that overretention of the maxillary primary incisors, especially if asymmetric or in case of the significant ectopic eruption of one or both permanent maxillary incisors, is due to the presence of mesiodens.<sup>8</sup> In primary dentition, mesiodens often has normal shape and erupt normally, and this is the reason why these teeth are often overlooked. The other possible reason for the less frequent reporting of primary mesiodens might be the difficulty in its detection by the caregiver. It is common that anterior primary mesiodens erupts and exfoliates normally before detection and could be mistaken with germination or fusion anomalies.<sup>9</sup>

In permanent dentition, the diagnosis is much easier following the eruption of the permanent anterior teeth. However, in permanent dentition, the detection of supernumeraries needs thorough clinical and radiographic examination. Panoramic, maxillary occlusal, and periapical radiographs are recommended to assist the process of diagnosis of mesiodens. Although panoramic radiograph is the best screening tool, clarity in the midline region is still limited for the diagnosis of mesiodens. For precise view, in the incisor region, anterior occlusal or periapical radiograph is also helpful.<sup>10</sup> Mesiodentes are frequently associated with various craniofacial

anomalies including cleft lip and palate, Gardner's syndrome, and cleidocranial dysostosis.<sup>11</sup>

The occurrence of multiple supernumerary teeth without any associated systemic conditions or syndromes, however, is a rare phenomenon.<sup>12</sup> In present case the patient was not affected by any syndrome.

Extraction is not the only treatment choice for impacted mesiodentes. If the mesiodens remains in place without symptoms and does not adversely affect the adjacent teeth, it may be left in place and observed periodically.<sup>13</sup> In the present case, the surgical removal of the mesiodentes was judged necessary since these teeth had caused impaction of permanent central incisor.<sup>12,13</sup>

There are no precise indications concerning the ideal time for the surgical removal of impacted mesiodens. According to Atwan *et al.*, a mesiodens can be the best removed when the permanent central incisors start to erupt, but this may not be always possible.<sup>14</sup>

## CONCLUSION

Early diagnosis of the presence of mesiodens and their extraction allows the spontaneous eruption of affected incisors, preventing associated complications. The time it takes for a permanent tooth to erupt once a supernumerary tooth has been extracted varies from six months to three years. The factors influencing eruption are: type of supernumerary tooth, number of supernumerary teeth, displacement distance of the permanent tooth still to erupt, angle of impaction in relation to the midline, amount of root formation of permanent tooth, stage of root development of the supernumerary tooth, and space available in the dental arch for eruption of the permanent tooth yet to erupt.

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