



# Mesiodens; a common dental problem in pediatric patients. A case report

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## Abstract:

A mesiodens is a most common supernumerary tooth which is one of the most significant dental anomalies at the primary and early mixed dentition stages. The reported prevalence of mesiodens in general population ranges between 0.15% to 1.9% and more frequently found in the permanent dentition but rarely found in primary dentition. Mesiodens are primarily responsible for eruption disturbances or delay of the maxillary anterior permanent teeth emergence. Therefore the dentists and parents are great concern about malocclusion and esthetic problems which is caused by mesiodense. Early detection, diagnosis and treatment of mesiodens is important to prevent further complications in permanent dentition. A case of mesiodens of 8 years old child in upper anterior region in mixed dentition and their management have been discussed.

**KEY WORDS:** Malocclusion, Mesiodens, Mixed dentition, Supernumerary tooth, Supplemental tooth.

## INTRODUCTION:

Supernumerary teeth may be defined as presence of any teeth in excess of the common figure of twenty deciduous, and thirty-two permanent teeth.<sup>1</sup> Mesiodens is known to be the most common type of supernumerary tooth which is located in 82% of the cases in the maxillary anterior region, specifically in the premaxillary region.<sup>2</sup> The prevalence of mesiodens varies between different racial groups, most frequently seen in Asian population which is even higher compared to the Caucasian population.<sup>3,4</sup> Mesiodens can occur singly or as multiples (mesiodentes), may be located unilaterally or bilaterally, and often do not erupt<sup>5</sup>. Patients with a mesiodense may have other access number of teeth whereas few patients represent with mesiodens in combination with congenitally missing teeth.<sup>6,7</sup> In some syndrome like craniofacial anomalies including cleft lip and palate, Gardner's syndrome and cleidocranial dysostosis, mesiodens may present clinically.<sup>8</sup> However, some authors reported that, the positive family history considered to be the one of the predisposing factors.<sup>9</sup> Various complications might occur as a result of the presence of mesiodens including median diastema, delayed eruption, impaction of permanent incisors crowding, spacing, rotation, abnormal root formation, alteration in the path of eruption of permanent incisors, cystic lesions, intraoral infection, root resorption of the adjacent teeth or even eruption of incisors in the nasal cavity.<sup>10</sup> Seddon *et al.* reported delayed eruption in 26-52% of the cases and displacement or rotation of adjacent teeth in 28% to 63% of the cases. Moreover, he also reported adjacent tooth root resorption, crowding, ectopic eruption of permanent tooth in nasal cavity and also in some cases development of dentigerous cyst.<sup>11</sup> Management of mesiodens depends on its type and position. Mesiodens is needed to remove

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immediately in some situations like; delay of eruption, displacement of the adjacent tooth, presence of any pathologic condition, interference with orthodontic appliances, , or spontaneous eruption of the supernumerary tooth.<sup>12</sup> Munns *et al.* stated that, the earlier removal of mesiodens results in better prognosis.<sup>13</sup> Some authors recommend that, the early mixed dentition is preferable time to extract mesiodens to facilitate spontaneous eruption and alignment of the incisors.<sup>14,15</sup>

### CASE REPORT

A 8 years old male child had reported with the chief complain of presence of an extra front tooth in the department of Paediatric Dentistry, University Dental College and Hospital, Bangladesh. The child was healthy and previous medical history was nothing contributory. During the clinical examination, presence of mesiodens between two upper central incisors was revealed (Fig. 1). There was evidence of malocclusion was seen in upper anterior region of maxilla. Completely erupted conical shaped mesiodens was clearly demarcated from central incisors. Right upper central incisor was malpositioned and rotated (Fig. 2) due to presence of mesiodense. The child has no complain of pain and discomfort but was aesthetically concerned.



From upper left to right: Fig. 1: Frontal view of mesiodens, Fig. 2: Malpositioned upper right central incisor, Fig. 3: Panoramic radiograph showed presence of mesiodens with complete root formation. Radiographic examination showed presence of clearly distinguished conical shaped mesiodens between two upper central incisors (Fig. 3). Moreover, complete root formation was also detected through the radiograph.



From left to right: Fig. 4: Healed soft tissue at extraction site Fig. 5: Improved position of incisors

Treatment plan was made according to clinical and radiographic examinations. Treatment involves extraction of mesiodens under administration of local anesthetic solution (infiltration of 1 ml of Lidocaine with adrenaline 1:100000).

Following control of bleeding, post extraction instructions were given and child was put in an appointment for 1 month follow up.

During the follow up visit, completely healing of soft tissue in extraction site was noted (Fig. 4). Position of upper right central incisor was improved and de-rotation was detected (Fig. 5). The child did not have any other complain of pain or discomfort thus referred to the department of Orthodontics for correction of malocclusion and better alignment of teeth.

### DISCUSSION:

The case of management of mesiodens described above represents a small sample of the possible management protocol of supernumerary teeth and supplemental teeth. Early management is recommended due to spontaneous eruption of the permanent incisors are influenced by eruption status of supernumerary tooth.<sup>16</sup> It is essential to compute and identify the teeth present clinically as well as radiographically before making a definitive treatment plan.<sup>17</sup> In this case, thorough examination of teeth was carried out and radiograph was taken before making final treatment planning. Crowding and lack of space was noted due to presence of mesiodens thus extraction was the treatment of choice. Lo Giudice *et al.* encountered supplemental tooth in maxillary anterior region that caused malocclusion was managed by extraction similar to this case.<sup>18</sup> The improvement of the position of malaligned central incisor was noted after removal of mesiodens thus the child was referred to department of Orthodontic for better alignment of teeth. If there is unerupted teeth associated with mesiodense, space maintenance is recommended.<sup>18</sup> Although the timing of removal of mesiodens is controversial, but evidences available it would seem to be wise to treat by removal of the supernumerary where sufficient space is available.<sup>17</sup> Ferrazzano *et al.* recommend multidisciplinary approach for correction of malocclusion in their management of supernumerary teeth.<sup>19</sup> They also added presence of supernumerary teeth can disrupt the development of normal occlusion thus timely intervention should be undertaken.<sup>19</sup>

In this case, malpositioned central incisor was in erupting state and timely intervention caused improvement of position of the tooth. Mesiodens causes displacement or rotation of a central incisor in 28% to 63% of cases and among those labially displace incisors in 82% of cases.<sup>20</sup> Untreated mesiodens can cause root resorption of adjacent tooth, crowding, ectopic eruption of permanent tooth and even formation of cystic lesion.<sup>12</sup> The mesiodens managed in this case was conical in shape, which is considered to be the most common one. The other types of supernumerary teeth can be supplemental, tuberculated or mixed.<sup>21</sup> Removal of mesiodens in early mixed dentition may result in better alignment of the teeth while delayed treatment greater the chance of malaligned permanent incisors.<sup>20</sup> However, early diagnosis and well established treatment planning is mandatory for management of supernumerary tooth.<sup>13</sup>

**CONCLUSIONS:**

Mesiodens as the most prevalent form of supernumerary teeth in permanent dentition is not a rare condition. The treatment of supernumerary teeth usually depends on their type, position and possible complications detected through clinical and radiographic examination. Extraction is advisable when there is interference with permanent dentition to avoid any disorders or complications. In this case report extraction of mesiodens was carried out and favourable outcome was noted. Multidisciplinary treatment approach is recommended in order to obtain optimum dental occlusion.

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