

## Midline supernumerary tooth: Types -A synopsis of cases

Dr. R. Neeraja<sup>1</sup>, Dr. Kayalvizhi G<sup>2</sup>

<sup>1</sup>Associate professor, Department of Pedodontics and Preventive Dentistry, M.R. Ambedkar Dental College, Bangalore, Karnataka, India

<sup>2</sup>Professor, Department of Pedodontics and Preventive Dentistry, Indira Gandhi institute of dental sciences, Puducherry, India

### \*Corresponding author

Dr. Neeraja. R

Email: [neeraja\\_pedo@yahoo.com](mailto:neeraja_pedo@yahoo.com)

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**Abstract:** Mesiodens is the most common supernumerary tooth, located in the midline of maxilla. It may occur individually or as multiples, erupted or impacted, may erupt between central incisors causing diastema or palatal displacement of incisors. Mesiodens are classified into supplemental and rudimentary based on their shapes. Supplemental refers to supernumerary teeth of normal shape and size and may also be termed incisiform. Rudimentary defines teeth of abnormal shape and size including conical, tuberculate and molariform type. Mesiodens are not caused by malocclusion, they may cause it. Therefore it is preferable to extract them as early as possible. We present here a series of cases of mesiodens which includes 3 cases of rudimentary type, 1 case of supplemental type and a case of double conical mesiodens, one erupted and one impacted.

**Keywords:** Mesiodens; Maxillary; Impacted; Molariform; Conical, Supplemental.

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### INTRODUCTION

A mesiodens is a supernumerary tooth located in the maxillary central incisor region [1]. They can occur individually or as multiples (mesiodentes). The literature reports that 80 to 90% of all supernumerary teeth occur in the maxilla and half are found in the anterior region [2]. Mesiodens can be classified on the basis of their shape into two types: Supplemental and rudimentary [3]. They may erupt normally, stay impacted, appear inverted, take an ectopic position, or follow an abnormal path of eruption. Mesiodens may precipitate a variety of complications to the developing dentition/occlusion of a child like crowding, delayed eruption, diastema, rotations, cystic lesions, resorption of adjacent teeth etc. [4]. We present here a series of cases of mesiodens which includes 3 cases of rudimentary type, 1 case of supplemental type and a case of double conical mesiodens, one erupted and one impacted.

### CASE REPORTS

#### Case 1

An eight year old boy along with his mother reported to our department with the chief complaint of labially erupting upper front teeth. Clinically, a premolar shaped crown [Fig-1, a] was located palatal to the permanent upper left central incisors causing its labial displacement and midline diastema [Fig-1, b]. Intra-oral periapical (IOPA) radiograph of the maxillary anterior region revealed an extra tooth with premolar like crown and fully formed root superimposed over the upper permanent left central incisor [Fig-1, c]. This extra tooth was diagnosed as molariform mesiodens based on clinical and radiographic examination. No other anomaly was detected. Extraction of mesiodens was done under local anesthesia [Fig-1, d].



**Fig1: Molariform mesiodens- a) Intra oral view, b) Labial displacement of permanent lateral incisor, c) Radiographic view, d) Extracted molariform mesiodens.**

### Case 2

A nine year old girl along with her mother reported to our department with the chief complaint of a tooth erupting behind her upper front teeth. Clinically a conical shaped tooth was located palatally between the permanent upper central incisors causing midline

diastema and labial displacement of the left central incisor [Fig-2, a]. Radiographically, a completely formed mesiodens with a conical crown and a root [Fig-2, b] was seen, hence it was diagnosed as conical mesiodens and was extracted under local anesthesia [Fig-2, c].

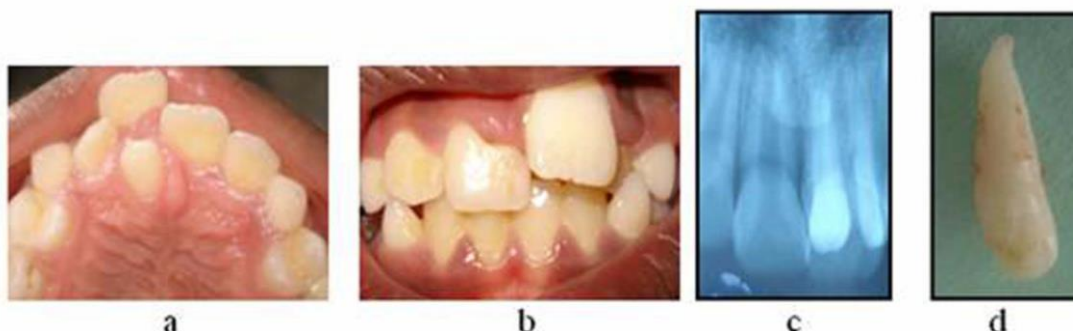


**Fig-2: Conical mesiodens- a) Intra oral view, b) Radiographic view, c) Extracted conical mesiodens.**

### Case 3

A nine year old boy along with his mother reported to our department with the chief complaint of malaligned upper front teeth. Intra oral examination revealed lateral incisor [Fig-3, a] located palatal to the permanent upper left central incisors causing its labial displacement [Fig-3, b]. IOPA of the maxillary anterior

region showed a completely formed tooth with a lateral incisor like crown and a root [Fig-3, c]. It was difficult to differentiate this extra tooth from lateral incisor because of their similarity. But based on careful clinical and radiographic examination it was diagnosed as supplemental mesiodens, which was extracted [Fig-3, d].

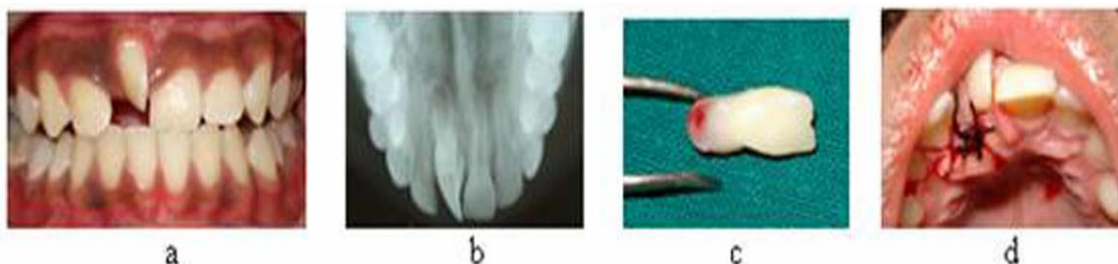


**Fig 3: Supplemental mesiodens- a) Intra oral view, b) Labial displacement of permanent lateral incisor, c) Radiographic view, d) Extracted supplemental mesiodens.**

### Case-4

A 10-year-old girl reported to the department accompanied by her mother with the chief complaint of displaced permanent central incisor. Clinical examination did not reveal any findings. Radiographic examination revealed a tooth which was barrel shaped

with several tubercles and incomplete root formation, which was impacted. Hence was diagnosed as tuberculate mesiodens. Incisions were placed, flap was raised and mesiodens was removed followed by which sutures were placed. After a week patient was recalled and sutures were removed.

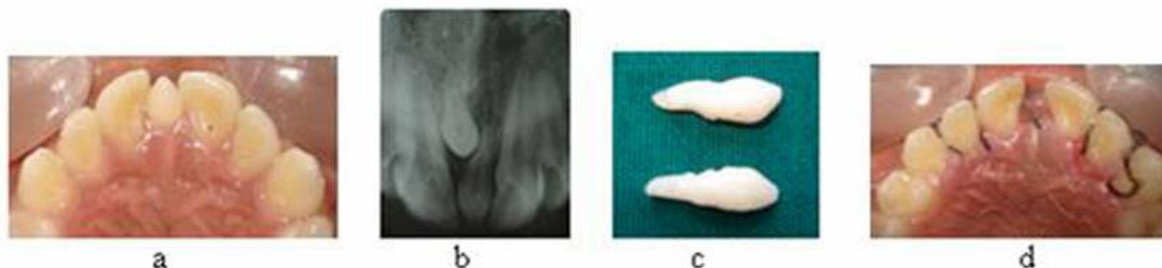


**Fig 4: Tuberculate mesiodens- a) Intra oral view b) Radiographic view c) Removed mesiodens d) Sutures placed.**

### Case-5

A 12-year-old boy reported to the department accompanied by his mother with chief complaint of extra tooth in the front region. Clinical examination revealed a conical mesiodens between the permanent centrals. Radiographic examination revealed another

impacted conical mesiodens with incomplete root formation overlying the tip of erupted mesiodens. The erupted one was extracted and on surgical exposure of flap the impacted mesiodens was removed and sutures were placed.



**Fig 5: Double conical mesiodens- a) Intra oral view b) Radiographic view c) Extracted mesiodens d) Sutures placed.**

### DISCUSSION

Mesiodens is the most common of supernumerary teeth located mesial to both centrals; appearing peg shaped in a normal position or inverted position [5]. This midline supernumerary tooth has been named mesiodens because of its position in the centre of maxilla [6].

The etiology of supernumerary teeth remains unknown; however, it is appropriate to consider hyperdontia as a multifactorial inheritance disorder as many authors have suggested inheritance as a key factor in the development of mesiodens [7] a detailed family history is recommended. In all our patients family and medical history was not remarkable. Several theories have been proposed for the etiology of hyperdontia: theory of differentiation, theory of concrescence, post permanent theory, dichotomy theory and hyperactivity theory. However the hyperactivity theory, which states that supernumerary teeth are derived from independent local hyperactivity of the dental lamina, has been more accepted [8].

In children 85% of anterior supernumeraries are unerupted and 65% interfere with the normal eruption of the maxillary permanent incisors [6]. The impacted mesiodens cause disturbance in the natural development of the permanent incisors and midline diastema [9, 10] as seen in our cases. The presence of supernumeraries may be associated with various developmental disorders which was evident in our case. Detection of mesiodens is best achieved by clinical examination and radiography (IOPA, occlusal, orthopantomogram) [5].

In case report 1, the intra oral appearance of premolar like crown with completely formed root was diagnosed as molariform mesiodens which is a very rare type. It caused labial displacement of upper left permanent central incisor and midline diastema In case report 2, a peg shaped tooth with completely formed

root fully erupted into oral cavity was diagnosed as conical mesiodens. It not only caused labial displacement of upper left permanent central incisor but also midline diastema. In case report 3, the extra tooth resembled the permanent lateral incisor. So it was diagnosed as supplemental mesiodens. It caused labial displacement of upper left permanent central incisor. In case report -4, a barrel shaped tooth with several tubercles / cusp with incomplete root formation was diagnosed as tuberculate mesiodens. They rarely erupt. The impacted tuberculate mesiodens caused rotation of right upper central incisor. In case report -5, the double conical mesiodens caused midline diastema.

Management depends upon the type of mesiodens, its position, relation to other teeth and their effect on adjacent teeth. Their treatment of choice is extraction of the supernumerary tooth with orthodontic treatment if required as appropriate. In case 1, 2, 3 and 5 the erupted mesiodens were extracted and the impacted ones were surgically removed as in case 4 and 5. Periodic recall check ups are necessary in such cases as in 75% of cases, extraction of the mesiodens during mixed dentition results in spontaneous eruption and alignment of the adjacent teeth [11].

### CONCLUSION

A mesiodens can be suspected if there is an asymmetric eruption pattern of the maxillary incisors/ delay eruption/ ectopic eruption. It is important that clinical diagnosis and management of this condition should be done early, in order to minimize aesthetic, functional and occlusal problems which may arise in future.

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