

## MANAGEMENT OF IMPACTED CENTRAL INCISOR ASSOCIATED WITH TWO SUPERNUMERARY TEETH –A CASE REPORT .

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**ABSTRACT:** – Multiple supernumerary teeth without any associated syndromes are not common. A mesiodens is a supernumerary tooth located in the palatal midline between the two maxillary central incisors. Mesiodens may give rise to a variety of complications, such as impaction, delayed eruption and ectopic eruption of adjacent teeth.

**KEYWORDS:** supernumerary teeth, mesiodens, impaction

### INTRODUCTION

A supernumerary tooth is one that is additional to the normal series and can be found in almost any region of the dental arch.<sup>1</sup>These teeth were first described in 23 and 79 AD. Supernumerary teeth have been reported both in deciduous and permanent dentition with a male predilection. Supernumerary teeth may occur in any area of the dental arch, may be single or multiple, present unilaterally or bilaterally, malformed morphologically or normal in size and shape, straight or inverted in position and may be erupted or impacted.<sup>2</sup> Although several theories have been submitted to explain their development, the precise etiology of supernumerary teeth is not clearly understood. But the common suggestion about etiology of supernumerary teeth is considered to develop as a result of horizontal proliferation or a hyperactivity of the dental lamina.<sup>3</sup>Supernumerary teeth have been associated with a number of developmental disorders and syndromes, such as cleidocranial dysplasia, Gardner's syndrome and lip and palatal fissures. Multiple supernumerary teeth unrelated to any syndrome or systemic illness are very uncommon; in such cases, they are normally found in the inferior premolar area.<sup>4</sup> Supernumerary teeth are most frequently located in the maxillary incisor region (64.3%) with mesiodens accounting for 32.4% of such presentation. 56-60% of premaxillary supernumerary teeth cause impaction of permanent incisor due to a direct obstruction for the eruption tipping of adjacent teeth towards the place of the impacted tooth, narrowing of the dental arch, displacement of the permanent teeth bud, or malformations of the unerupted tooth root.<sup>5</sup> Spontaneous eruption of impacted maxillary incisors occurs in 54-76% of cases when

supernumerary tooth is removed and there is enough space in the dental arch. However, research data indicate that the spontaneous eruption of impacted maxillary incisor may take up to 3 years and sometimes orthodontic treatment is necessary to achieve adequate alignment of the erupted tooth in the dental arch.<sup>6</sup>unless they are diagnosed early and managed properly, supernumerary in maxillary anterior region may cause variety of pathologic disturbances to developing permanent dentition. Thus early diagnosis, evaluation and appropriate treatment is essential.<sup>7</sup>

### Case report

A seven year old male child reported to the department, with the chief complaint of the presence of an irregular tooth in the upper front tooth region since the last 4-5 months. Parents gave a history of Idiopathic thrombocytopenic purpura and reported the presence of purpuric ecchymotic patches all over the body episodically, bleeding from the gums, epistaxis and red spots over bulbar conjunctiva in the years 2010, 2011, 2013 and 2014. History of dengue fever in the year 2011 for which he was hospitalized. The drug history revealed that patient was treated with platelet concentrates, steroids(prednisolone) and other supportive measure. Intraoral examination revealed the presence of mixed dentition, with a mesiodens in place of the central incisor on the right side (**Fig.1 and Fig.2**). IOPA revealed an impacted central incisor on the right side as well as the presence of another supernumerary tooth(**Fig.3**). Orthopantomograph(OPG) and Occlusal radiograph

revealed the presence of another supernumerary tooth (Fig.4 and Fig.5). Intraorally, a bulge was seen to be present in the midpalatine region of the hard palate. On palpation it was found to be bony hard and suggestive of a palatally impacted supernumerary tooth (Fig.6). After appropriate blood investigations and physicians consent. Prophylactic antibiotic coverage was advised and mesiodens was extracted (Fig.7).

The palatally impacted supernumerary tooth was removed surgically by raising the palatal flap under Local anaesthesia(Fig.8 and Fig.9). After one month the child was recalled for further follow up. The intraoral examination revealed complete healing and the central incisor that was impacted due to presence of mesiodens was now seen to be erupting (Fig.10 and Fig.11). A postoperative IOPA and occlusal radiograph were taken, after one month central incisor erupted spontaneously. The patient had been for follow up for 6 months and is still on follow up .

Discussion

Supernumerary teeth may be classified according to morphology as conical, tuberculate, supplemental and odontoma; according to their location as mesiodens, paramolar and distomolar. They can also be classified based on whether or not they are associated with any syndrome as non-syndrome associated supernumerary teeth and syndrome associated supernumerary teeth.<sup>1</sup>

The presence of supernumerary teeth has the potential to disrupt the development of normal occlusion, and early diagnosis is crucial to minimise complications such as the development of dentigerous cysts, root resorption of adjacent teeth, and bone loss [Primosch, 1981; Kessler and Kraut, 1989]. Therefore, a timely intervention that aims to remove the supernumerary teeth is recommended, followed by an observation period until the eruption of the impacted permanent incisor in the oral cavity. If the impacted permanent incisor does not erupt spontaneously, orthodontic intervention is required to align the impacted tooth in the occlusal plane.<sup>4</sup> The treatment protocol available for management of impacted permanent teeth due to supernumerary teeth are diverse. Methods of management of crowding or impaction due to supernumerary tooth are; removal of supernumerary teeth or tooth only, removal of supernumerary teeth and bone overlying impacted teeth, incision of fibrous tissue over the alveolar ridge to promote the eruption with or without orthodontic traction . There are two schools of thoughts for the removal of supernumerary teeth . The delayed approach recommends intervention upon apical maturation of the central and lateral incisors, at an age around eight to ten years. The immediate approach calls for removal of the supernumerary teeth soon after the initial diagnosis of their presence.<sup>8</sup>The disadvantage of the combined surgical/orthodontic therapy is required a longer treatment period and some complication including



Fig. 1. Extraoral photographs



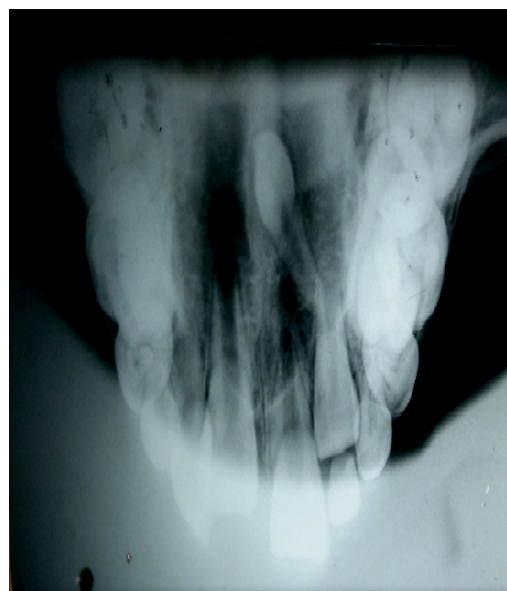
Fig. 2. Intraoral photographs showing presence of mesiodens in place of right central incisor



Fig. 3. Preoperative Radiographs. – IOPA



**Fig. 4. Preoperative Radiographs. -OPG**



**Fig. 5. Preoperative Radiographs. - Maxillary Occlusal view showing another impacted supernumerary tooth.**

ankylosis, non-vital pulps and root resorptions may be encountered. When an extensive amount of bone is removed or an open approach method is used to expose the impacted teeth, surgically, periodontal complication can be occurred such as gingival recession, delay in periodontal healing, gingivitis, bone loss and decrease in the width of keratinized gingiva.<sup>3</sup>

There is no sufficient evidence in the published literature that indicates the exact age of removal of supernumerary teeth. Conflicting ideas on the type and timing of treatment still persist.<sup>9</sup>

Shah et al opined that the extraction of erupted supernumerary teeth in almost all cases except in those patients who had missing teeth. Annual radiographic evaluation is advisable if the supernumerary teeth cause no complications and are not likely to interfere with orthodontic tooth movement.<sup>10</sup>

De oliveira et al advocated that Supernumerary teeth should be removed based on their development, regardless of the morphology type.<sup>11</sup>

Meighani and Pakdaman reviewed that Removal of midline supernumerary teeth in the early mixed dentition facilitates spontaneous alignment of the adjacent teeth; however, symptomless cases could be left untreated and regular check up done.<sup>12</sup>

Omer et al . suggested that 6-7 years of age is an appropriate age range for removal of supernumerary teeth, if the supernumerary teeth left after that age it may create complications.<sup>13</sup>

Parolia et al. said that removal of supernumerary teeth should be performed cautiously to prevent damage to adjacent permanent teeth, which may cause ankylosis and ectopic eruption of these teeth.<sup>14</sup>

Nuvvula et al . postulated that the early removal of causative supernumerary teeth in cases of severely rotated unerupted incisors may result in self-correction and proper alignment.<sup>15</sup>

Bahadure et al.postulated that the Management of supernumerary teeth depends on the age of the patient, cooperation on the dental chair, and the position of supernumerary tooth and their effects. It is also based on the length and size of supernumerary teeth and physiological resorption of adjacent teeth.<sup>16</sup>

Most recently, it has been reported that the removal of supernumerary teeth would be justifiable based on whether the associated complications leading to pathology or not. Nonpathological and asymptomatic cases are to be treated with a conservative approach.<sup>17</sup>

So In this case , there was spontaneous eruption of the central incisor followed by normal extraction and surgical removal of the impacted tooth.

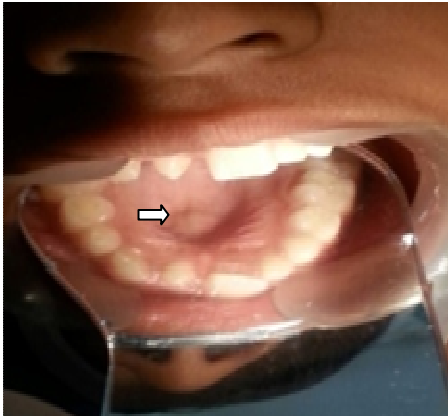


Fig. 6. Bulge on hard palate



Fig. 7.Extracted mesiodens suggesting the palatally placed supernumerary tooth

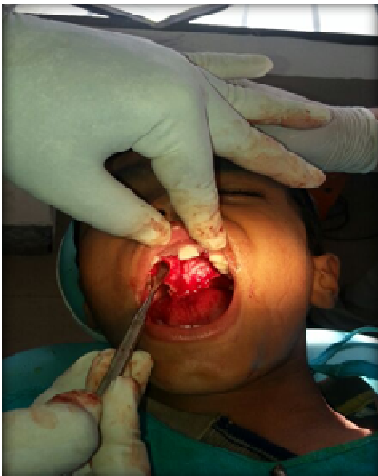


Fig.8 and Fig.9. Palatal flap reflection



Fig.10. Extracted palatally impacted supernumerary tooth



Fig.11. After suture placement





Fig.12 and Fig.13. Postoperative after 1 month showing spontaneous eruption of central incisor



Fig.13. Postoperative IOPA after 1 month



Fig.14. Postoperative occlusal radiograph after 1 month



Fig.15 and Fig.16. Postoperativeafter 6 month showing complete eruption of central incisor

**CONCLUSION**

- Supernumerary teeth may result in the non- eruption of adjacent permanent incisors. Early diagnosis of the presence and removal of supernumerary teeth is essential.
- The role of the pedodontist is important because the earlier the detection, minimal future complications and better is the prognosis.
- Uneventful surgical management of mesiodens and palatally impacted supernumerary tooth was accomplished in idiopathic thrombocytopenic purpura patient.

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