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Solitary Median Maxillary Central Incisor – A Rare Case Report

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Abstract

The solitary median maxillary central incisor is a rare dental anomaly present in 1:50,000 live birth. It is most commonly present in maxillary arch in midline with absence of its contrary part with unknown etiology. It may or may not be associated with other systemic conditions. It is rare if it is not associated with any systemic conditions. This case report is describing eight-year-old girl diagnosed with the same anomaly with apparently no other anomaly. Early diagnosis of this condition may help in management of dental problems in future. Management includes esthetic and functional improvement with combined orthodontics, surgical and prosthodontics approach.

Keywords: Solitary, congenital anomaly, Median central incisor

Abbreviation: SMMCI (solitary median maxillary central incisors)

Introduction

Solitary median maxillary central incisor is a rare anomaly affecting the deciduous as well as permanent maxillary central incisors. The name was originally given by Hall et al. It has an incidence of 1:50,000 live birth.1 The main features of this anomaly are as the name suggest solitary (only tooth present), median (will be present in the middle of the jaw), maxillary (will be present in maxilla) , central incisor (affected central incisor).2

The affected tooth will be normal in crown and root morphology, but will be only present at midline of the maxillary arch with or without associated symptoms.3

Its etiology is unknown, sometimes it is also associated with several symptoms respiratory disorder,

hypoglycemia, low cortisol level, hypopituitarism. 4 But solitary central incisor without any associated syndrome is very rare.5 This case report is describing the same.

Case Report

We reported a case of an eight-year-old girl with her father complaining of unaesthetic appearance in Department of Pedodontics and Preventive Dentistry SCB dental college and hospital, Cuttack, Odisha. Her father was complaining of missing tooth after shedding of deciduous tooth for long. Medical history revealed no associated symptoms. Her father told that the delivery was normal and she was born full term. No other members in the family had same complaint. There was no history of trauma to teeth. Her weight and height were normal.

Dental history revealed mixed dentition with erupting maxillary central incisor (figure 1). Extraorally there were no anomaly present, no mid face deficiency was noted. Lips were also normal. Intraorally maxillary arch was U shaped and mandibular arch was V shaped. Maxillary and mandibular frenums were absent (figure 2 and 3) and mandibular lateral incisor was erupting lingually (figure 3).No cleft was present in maxillary arch (figure 3 a) Patient was referred to Department of Oral Medicine and Radiology, SCB dental college and hospital for Intra oral periapical radiograph (IOPA)(figure 4) and occlusal radiograph (figure 5) . IOPA showed solitary central incisor present on median line ,and the root was incompletely formed .Occlusal radiograph showed no other teeth present at aberrant location. To detect any other abnormalities in mandibular dentition patient is again referred for Orthopantograph (OPG) (figure 6) which revealed normal dentition in mandibular arch. No other abnormality was found.

On the basis of clinical and radiographic examination, it was diagnosed with solitary median maxillary central incisor. Patient is advised to wait for orthodontics and prosthetic rehabilitation and she was also referred to Department of pediatrics for evaluation of any other systemic conditions.

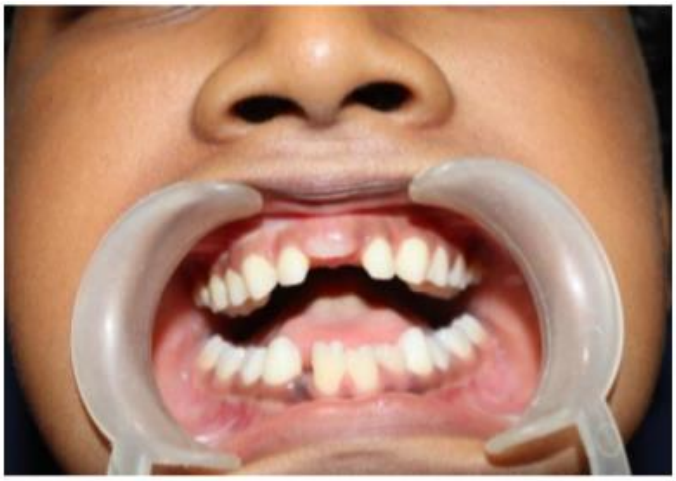

Fig1: Intraoral view showing erupting central incisor

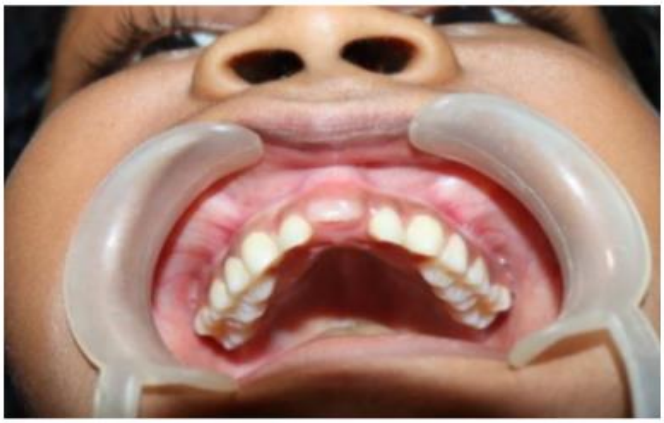

Fig. 2: Intraoral view showing absence of maxillary frenum

Fig. 3 a: Intraoral view showing erupting lower lateral incisor

Fig. 3 b: Maxillary U-shaped arch

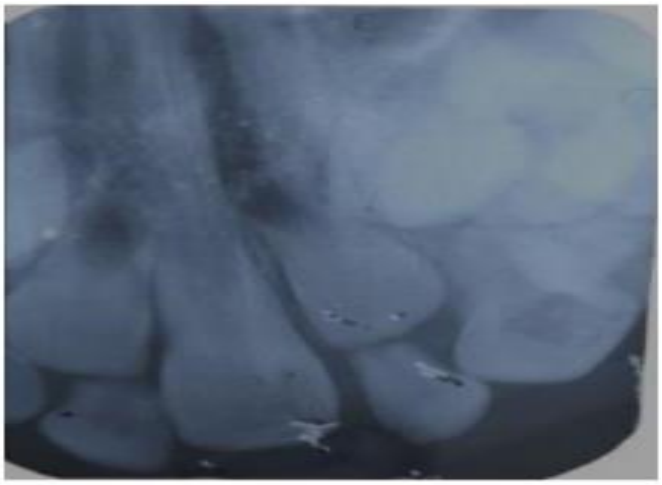

Fig. 4: Intraoral periapical radiograph showing incomplete root formation

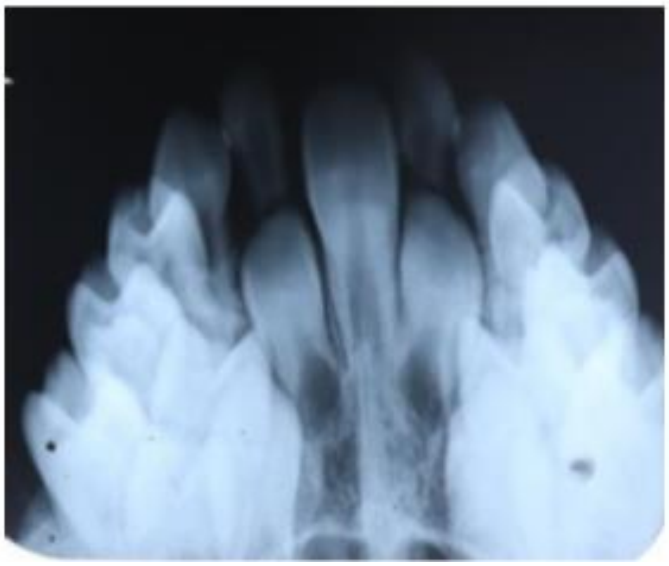

Fig. 5: Occlusal radiograph showing presence of solitary central incisors present in midline

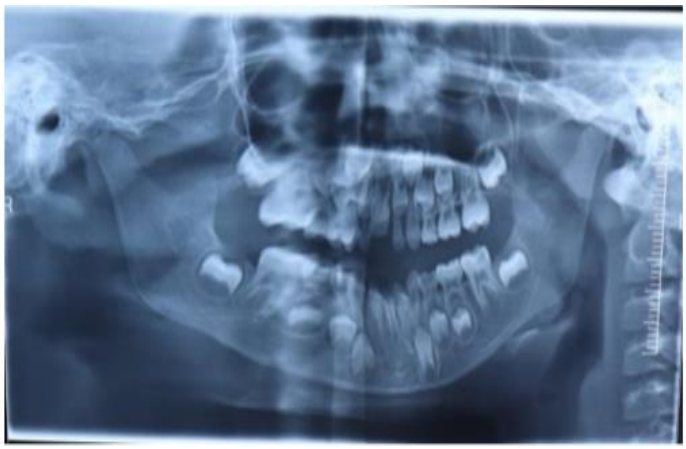

Fig. 6: Orthopantomograph showing no other anomalies detected in mandibular and maxillary arch

Discussion

The clinical and radiographic pictures with no history of trauma and associated symptoms confirmed that this is the case of solitary median maxillary central incisor. One of the maxillary central incisor was absent along with maxillary and mandibular frenums with no other anomaly present. The central incisors were present exactly at midline.

Though the etiology is unknown but Hall et al explained that critical absence of, or reduction in, lateral growth from the midline, on or about gestation day 37 or 38, results in premature fusion of the epithelial dental lamina, thus preventing the formation of two complete and separate central incisor teeth.6 It is believed to have a genetic background involving a mutation in gene Sonic Hedgehog (SHH) in chromosome 7q36.1.7

Crown morphology was normal and root was developing. It can be differentiated from supernumerary teeth by normal morphology of crown and root associated with absent contralateral tooth where as in supernumerary tooth it is abnormal in shape and size and present as a result of hyperactivity of dental lamina.8

In several studies conducted earlier, SMMCI has been associated with a short stature and growth hormone deficiency.9 But in our case no such retarded growth was

seen. This case may be sporadic because the parents have no history of consanguinity and no other sibling was affected from this disease. She was referred to pediatrician to rule out any other systemic conditions.

This type of patients need long term treatment with multidisciplinary care and follow-up. Dental management will be done after eruption of all the permanent tooth with orthodontics intervention. Orthodontist will expand the arch and later implants can be placed to replace another maxillary central incisor.

Some cases might require extraction of the SMMCI followed by mesialization and reshaping of the laterals, canines, and premolars.10 A facial growth pattern in both transverse and sagittal directions and serial photographs should be taken as part of routine dental follow-up.

Conclusion

Solitary median maxillary central incisor is a rare dental anomaly which may not be associated with systemic conditions. Early diagnosis has an important role to rule out any other abnormalities. Therefore, systematic followup and close monitoring of the growth and development of SMMCI patients are very crucial. Multidisciplinary approach with genetic counselling will help in long-term.

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