CASE REPORT

MANAGEMENT OF ROTATED MAXILLARY CENTRAL INCISOR DUE TO MESIODENS: A CASE REPORT

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ABSTRACT

Teeth which are present in addition to deciduous and permanent teeth are called supernumerary teeth. Mesiodens is the supernumerary tooth that is wedged in between the central incisors which may lead to various problems. This case report aims to illustrate the management of rotated maxillary central incisor due to mesiodens by partial fixed ('2 × 4') therapy.

KEY WORDS

Mesiodens, Rotation, partial fixed therapy

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INTRODUCTION

It was first stated by Bolk in 1917 Mesiodens is an accessory or supernumerary tooth situated between the central incisors in maxilla.[1] Mesiodens occurs in a frequency of 0.5-3.8% in the permanent dentition.[2] It may either erupt in the oral cavity or may remain impacted in the jaws.[3] Mesiodens may lead to a variety of problems which include – growth and development of the jaws over retention of the primary teeth, impacted or delayed eruption of permanent teeth, dilacerations or abnormal root development, crowding or spacing in anterior teeth. In severe cases it may lead to root resorption of adjacent teeth, cyst formation, nasal eruption of teeth.[4] When any such of the problems are encountered it is necessary to extract the mesiodens and correct the other problems as indicated.[5-6]

CASE REPORT

A nine year old boy reported to the Department of Pedodontics and Preventive Dentistry with the chief complaint of malaligned teeth in the anterior region of the upper jaw (Fig.1) Medical history was non-contributary. On intraoral examination it was found that the left maxillary central incisor was rotated mesially. The parents also reported that an extra tooth was present in between the incisors which had been extracted earlier. The presence was confirmed by previous periapical radiograph (Fig. 2). In the absence of any vital dental trauma history and periodontal etiology, an occlusal radiograph was advised (Fig.3), which revealed the presence of a supernumerary tooth in between the central incisors more towards the palatal direction. After judging the space available in the cast, surgical removal of the mesiodens was planned followed by orthodontic correction of the rotated maxillary central incisor. Subsequently a complete hemogram was advised and the blood sugar levels were also recorded along with routine serological reports. No abnormalities was found. The patient was advised antibiotics and analgesics three days before the surgical removal of the mesiodens. Under local anaesthesia (Lignocaine with adrenaline 1:80,000) the palatal flap was raised in the region of the incisors and the mesiodens was extracted and the sutures were given to secure the

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Fig.1: Initial presentation Of the patient

Fig.2: Previous periapical radiograph

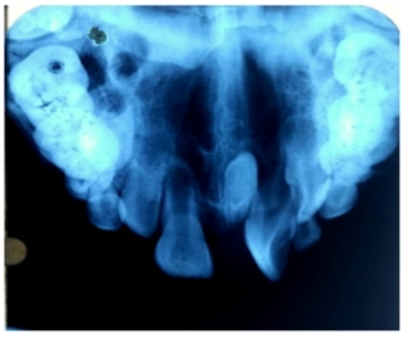

Fig. 3:Occlusal View

Fig.4: Pre-surgical view Of the site

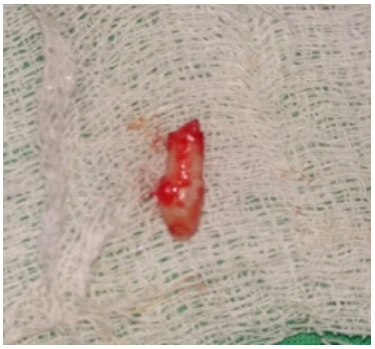

Fig.5: Extracted Supernumerary tooth

Fig.6 : '2 × 4'orthodontics for rotation

Fig7: Post–treatment view

flap after the tooth removal by available silk sutures. After seven days, the sutures were removed. After 3 weeks the patient was recalled for orthodontic correction of the rotated maxillary incisors. The rotation correction was started with partial fixed appliance ('2 × 4' appliance) with banding being done in the maxillary first molars and MBT brackets being placed in the central and lateral incisors. The treatment was started with .012" upper NITI wire and the wire strength was subsequently increased to .014" and .016" NITI wire. A supra-crestal fiberotomy was performed. Then the position of the derotated tooth was stabilized by 17" * 25" stainless steel wire. Finally the brackets were removed and a lingual bonded retainer was placed.

DISCUSSION

The most primitive evidence of mesiodens goes back to 13,000 years ago when it was found in Australian origin.[7] Among the maxillary anterior supernumerary tooth only 25% erupt. Nazif et al. reported that only 6% of mesiodens occur in the labial direction and 80% are present palatally. Rest is present between the roots of the incisors.[8]

In a study by Nagaveni et al., out of 27 mesiodens, complications associated with mesiodens occurred in the frequency of 23% midline diastema, 14.8% occlusal interference, 7.4% root resorption, and 3.7% delayed eruption of permanent incisors.[9]

Supernumerary teeth are one of the most common causes of rotation of upper incisor teeth. The other complications include-lack of eruption of permanent teeth, deviation from the eruption path, rotations and root resorption.[10]

The ideal treatment for tooth rotation include fixed '2 × 4' appliance in the mixed dentition (two bands on first molars and four bonded brackets on incisors) but it may complex to use if the teeth to be bracketed have not erupted.[11] Another disadvantage of the fixed appliance is difficulty in the maintenance

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of oral hygiene that can lead to decalcification of banded and bonded teeth.[12]

The second alternative treatment for derotation in some particular situations is a removable appliance with a labial bow and a palatal spring like z-spring, which provides the moment to derotate the tooth.[13] With the use of removable appliance in the whip device, a good anchorage unit is provided from the entire palate and the maxillary dentition, and thus can be suggested for correcting a severely rotated central incisor in the mixed dentition.[14]

In this case the tooth was treated partial fixed therapy and the desired results were obtained.

CONCLUSION

Surgery involving the palatal flap is most typical forvimpacted maxillary midline supernumerary teeth. Invthis case, palatal surgical approach was utilized to raise the flap for better visualization and easy removal of the tooth.

Treating the rotated tooth with partial fixed orthodontic therapy is a convenient mode of treatment provided proper case selection is made and patient's co-operation and compliance is obtained.

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