

CASE REPORT

Treatment of Mesiodens and Malposition on Class I Malocclusion With Removable Orthodontic Appliance

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ABSTRACT

Mesiodens is an additional tooth that is located among central incisors often occurs in pediatric patients and causes malocclusion. One of the treatment for malocclusion with mesiodens is extraction followed by orthodontic treatment. The purpose of this study is to discuss the treatment of class I malocclusion with mesiodens and malposition with removable orthodontics. A nine years old male patient had an additional tooth on his left upper front teeth. On oral examination, it was seen that the patient was still in the mixed dentition stage, class I the molar relation, the midline was not aligned, and there were malpositions of teeth 12, 22, 31, 41. Panoramic X-ray examination showed that there was mesiodens between teeth 11 and 21. Initial treatment was mesiodens extraction and followed by removable orthodontics after 6 months showed changes. Mesiodens can cause malpositions and one of the treatments is extraction followed by removable orthodontic treatment.

Keywords: Mesiodens; Orthodontic Treatment; Extraction

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INTRODUCTION

Mesiodens is one of the normal variations associated with dental development problems in children.¹ The prevalence varies between 0.3%-3.8% of the population and most are boys.² The cause of mesiodens is not known with certainty but there are several factors that influence. Factors that can be considered include: genetic factors, environmental factors, developmental disorders, atavism, dichotomy and hyperactivity of the dental lamina.²

Mesiodens diagnosis obtained from clinical examination and radiography. On clinical examination, the mesiodens erupted in the oral cavity and a delay in the eruption of the maxillary central incisors and the position of the teeth causing diastema were observed. Another examination by palpation to determine whether or not mesiodens.² Radiographic examination performed can provide information about the location, location of roots, number and relationship to adjacent structures. On occlusal and periapical radiographs with a horizontal angle can determine the mesiodens position.⁴

The position of the mesiodens which is located in the center of the incisor can cause ectopic tooth eruption on the surrounding teeth and cause malocclusion. One of the mesiodens treatment is extraction, this is done because mesiodens can cause aesthetic disturbances in the form of diastema and functional disorders. Maxillary midline diastema (MMD) has a characteristic distance between the maxillary central incisors. Treatment for MMD is to shift the central incisors to the median line using fixed orthodontic appliances, namely brackets or removable orthodontic appliances.⁴

CASE REPORT

A 9 year old boy came to Dr. Dental and Oral Hospital. Soedomo with complaints of unkempt front teeth. On objective examination there were additional teeth in the maxillary median line which caused tooth 21 to grow in the median line and tooth 22 to palatoversion (figure 1).

At the first visit, anamnesis, objective examination, IO and extra oral (EO) photos were carried out, panoramic and cephalometric photos, model study making, room analysis and treatment plans. Mesiodens treatment management in this case was extraction and continued by correcting the arrangement of the teeth using removable orthodontic appliances.

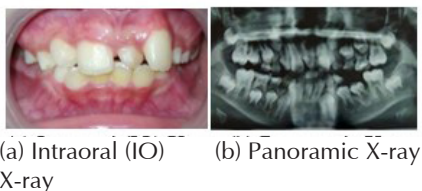


Figure 1 : Mesiodens between upper central incisors. Intraoral radiograph shows mesiodens between central incisors causing diastema (a). The panoramic X-ray shows mesiodens with straight roots (b).



Figure 2 : The condition of the IO after mesiodens extraction, there is a space of 1.1 cm.

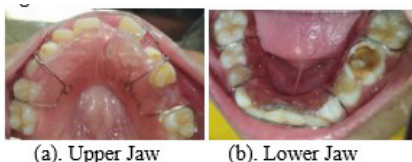


Figure 3 : Tools used in treatment.



Figure 4 : Intra-oral condition after the use of removable orthodontic appliances.

Table 1 : Space Analysis

Analysis	Results
Kuswandari Nishimo	There is excess space in all regions
Moyers	There is excess space in all regions
Radiograph analysis	Convex face profile
Skeletal down analysis (Samir Bishara)	Maxillary and mandibular growth within normal limits Class I malocclusion
Dental analysis	Maxillary and mandibular position with normal cranial base

The results of the spatial analysis of the study model and cephalometric photos (Table 1.) were used to develop a treatment plan.

In this case, the treatment plan that will be carried out is the use of a removable orthodontic appliance. Extraction of teeth 53, 63, 73, 83 to correct the malposition of teeth 12, 22, 32, 42, using a removable orthodontic appliance (Figure 3.) which functions to close the space between teeth 11 and 21 and correct the malposition. To maintain space for premature loss in the lower left region by using acrylic.

Patients are recommended for control once a week and evaluated after 6 months.

DISCUSSION

Mesiodens which is located between the central incisors can cause functional and aesthetic disturbances in children. In the case report of this patient, the mesiodens was located in the middle of the central incisor causing diastema, labioversion of tooth 21 and palatoversion of tooth 22. The mesiodens was extracted and followed by orthodontic treatment using an active plate with finger spring on tooth 21 and simple spring on tooth 22, and patients are advised to check once a week to activate the finger spring. Ashish Shah, 2018 states that if mesiodens teeth can affect tooth movement, extraction is one of the treatment options.⁵

In this case post-extraction orthodontic treatment using an active plate, this was chosen with the consideration that the patient was still in the mixed dentition period. This is based on Nia A.I, 2000 which states that orthodontic treatment in patients in the mixed dentition period should give light pressure.⁶

CONCLUSION

Mesiodens treatment is done because it interferes with aesthetics and functionality. The mesiodens extraction was followed by removable orthodontic treatment to make it easier to control the pressure on the teeth because the patient was still in the mixed dentition period.

ACKNOWLEDGEMENT

Thank you to the dental laboratory staff who helped in making the tools and all parties so that this treatment was carried out well.

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