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ABNORMAL MAXILLARY CENTRAL DIASTEMA TREATMENTS CAUSED BY MESIODENS

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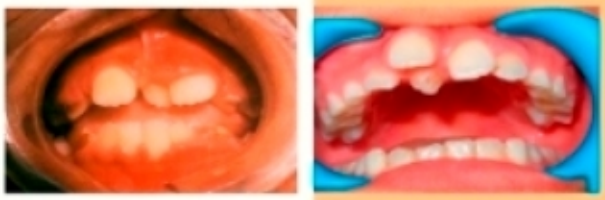
ABSTRACT

Mesiodens in primary or mixed dentition periode cause many clinical anomalies, such as delayed eruption of permanent teeth, root resorbtion of successor permanent teeth, abnormal maxillary central diastema, etc. Many treatments for closing abnormal central maxillary diastema have published with their advantages and disadvantages. The aim of these study was to evaluate many treatments for closing abnormal maxillary central diastema caused by mesiodens. The treatment using brakect and safety pin resulted reciprocal and controlled force, thus maxillary central incisives had moved bodily in closing abnormal maxillary central diastema .

Keywords : abnormal maxillary central diastema, mesiodens

INTRODUCTION

Mesiodens are the supernumerary teeth present in the midline of the maxilla between the two central incisors. Supernumerary teeth have been reported very few in the primary dentition than permanent dentition. The prevalence of mesiodens occurred more frequently in boys than girls, and the shapes are categorized in to conical, tuberculate, supplemental, molariform. Complication of mesiodens, such as delayed eruption of permanent incisors, crowding, abnormal maxillary diastema / central or midline diastema, axial rotation or inclination of erupted permanent incisors, resorbtion of adjacent teeth or mesiodens.



MESIODENS IN PERMANENT DENTITION

In fixed orthodontics appliances commonly use nickel titanium coil springs and elastomeric chain for space closure.
Safety pin is controlled movement appliance and produce resiprocal force on the teeth in space closure.
There is literary consensus in the sense that the ideal space closure mechanism should have mechanical properties that provide a light and continuous force that closes the orthodontic space in the shortest possible time
Tooth movement needed various forces, bodily movement required 100-150 gram force, tiping needed 50-75 gram force, and 15-25 gram force is required for intrusion.

Safety pin and resiprocal force that its produce

Safety pin :
a) coil diameter,
b) long of arm,
c) high of loop

DISCUSSION

Midline diatema or maxillary central diastema caused by mesiodens is abnormal, because it can close automatically / normally during growth and development of the jaw.
In the children 7 – 9 years of age , central maxillary diastema with 2 mm width have possibility to close naturally 20 %, wider central maxillary diastema have smaller possibility to close naturally.
Initial force that produced by Ni Ti spring was 228 gram force, elastomeric / plastic chain 195 gram force, meanwhile safety pin is made from 0,016 australian wire with 2,5 mm coil diameter; 6,75 mm long of arm and 5,8 mm high of loop, produced 135 gram force of each 1 mm activation.
Ortodontics treatment for closing abnormal maxillary central diastema caused by mesiodens with Ni Ti closed coil spring and elastomeric chain were similar in rates of space closure. Safety pin produced lower force than elastomeric and Ni Ti close coil spring, and reciprocal force that produced when it activated, so teeth moved bodily.
High initial force did not achieve greater space closure but resulted in greater percentage force decay.

Space closure orthodontic treatment used elastomeric chain

Before Treatment

After Treatment

Space closure orthodontic treatment used safety pin

On Treatment

After Treatment

CONCLUSION

It concluded that safety pin produced lower forces than Ni Ti close coil spring and elastomeric chain. Bodily and more controlled movement had produced in closing abnormal maxillary central diastema, so it could be alternative in space closure treatment.

REFERENCES

1. Astuti, E.S.Y., The Using Bracket And Safety Pin In Treatment For Abnormal Maxillary Central Diastema (Case Report Of Mesiodens), 2004, Thesis.
2. Bruno U.P., Rafael F.S., Mario V.F., Viviane V.D., Julio C.R.S, Carlos A.M.T., Force Degradation Of Different Elastomeric Chains and Nickel Titanium Closed Springs, Braz J Oral Sci, 2011; 10(3): 167-170.
3. Gurkeerat Singh, Biology of Tooth Movement In Textbook of Ortodontics, 2007, 2nd Ed., Jaypee Brothers Medical Publisher (P)LTD
4. Khandelwal V. et al., Prevalence Of Mesiodens among Six – To Seventeen - Years – Old School Going Children Of Indore, Journal Of Indian Society Of Pedodontics And Preventive Dentistry, 2011; 29(4), 288-293.
5. Nightingale, C. and Jones, S.P., A Clinical Investigation Of Force Delivery System For Ortodontic Space Closure, Journal of Ortodontics, 2003; 30; 229-236.
6. Navit, S., Firoze S., Prashant B., Rohit A., Anju B., Unusual Inverted And Molariform Supernumerery Teeth - A Case Report, J Dent Med Res, 2010; 3(7), 65-68.
7. Sim, J.M., Minor Tooth Movement in Children, 1972, C.V. Mosby Co., St Louis, pp.103-106, 122-125.
8. Tewi, F.V., Atlas of Orthodontic Appliances Fixed and Removable, 1985, The Firm Microart's, Illionis, p.3.

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