Juvenile Periodontitis

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INTRODUCTION

Periodontitis is a widely known oral disease that affects the periodontium. The periodontium involves the periodontal ligament, alveolar bone, gingiva, and the cementum. Juvenile periodontitis is not often heavily seen throughout the population but, children may still be susceptible to it. Likewise children may be prone to periodontitis due to the correlation with specific systemic diseases that may be acquired or inherited. Children undergo orthodontic treatment for functional and cranio-facial development which in return may be associated with periodontitis. This can be aided with scheduled maintenance appointments with the dental hygienist.

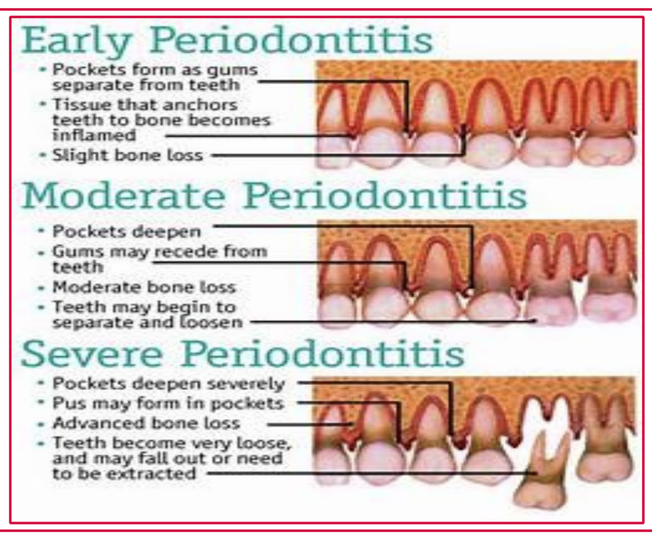
RADIOGRAPHY

Periodontitis can be evaluated on radiographs with high kvp ranging to about 90 kvp which produces a low contrast. Observations radiographically include the widening of the periodontal ligament and alveolar cortical bone loss that can either be vertical or horizontal. Vertical clinical attachment loss can be measured by examining the gingiva using a periodontal probe to measure the distance between the cementoenamel junction where the resistance of the infrabony apex meets the tooth (Lin, 2017, p.2). Compared to vertical bone loss horizontal loss can be measured with a schei ruler (Lin, 2017, p.5). This can be visualized with the mobility test as increase in mobility Causes early loss of teeth leading to severe stages of periodontitis.

ORTHODONTIC

Children with braces, space maintainers, or retainers have poor oral hygiene as they cannot maintain proper flossing and brushing technique, leading to harmful anaerobic bacteria getting trapped. Clinical studies have reported poor periodontal health and more significant loss of attachment level distally in the dental arches, resulting from poor oral hygiene in molar regions and the presence of molar bands that favor food lodgment (Alfuiji, 2014, p. 2). In a study done by Ristic et al., an increase in the value of periodontal indices and growth of periodontopathogenic bacteria were observed in adolescent patients following fixed orthodontic treatment (Alfuriji, 2014, p. 2). Root resportion is considered an undesirable but unavoidable iatrogenic consequence of orthodontic treatment, resulting in tooth mobility and even permanent tooth loss (Alfuriji, 2014, p. 2). All in all, these effects of orthodontic treatment can be threatening to the initiation of juvenile periodontitis but more research is recommended to better understand.

RADIOGRAPHY



DIABETES

Periodontal disease in adolescents and children is not something we see everyday, however it is something we should be aware of and know how to treat. Children with type 1 diabetes appear to be predisposed to more gingival inflammation and a higher rate of dental caries.There are microbial agents linked with systemic manifestations such as microangiopathy, impaired immune response, abnormal collagen metabolism and enhanced matrix metalloproteinase may contribute to the pathogenesis of periodontitis (Yaacob, 2019, p.2293). Only a limited number of studies have been performed in children with type 1 diabetes probably due to a relative rareness of the disease. Although, periodontitis does not belong to clinical manifestations of any type of diabetes mellitus, it is still being labeled as "the sixth chronic complication of diabetes." It has been confirmed that, in individuals with diabetes, there is about a three times higher risk of periodontitis. (Novotna, 2015, p. 3) Studies have shown that diabeteic children ages 5-9 and 10-14 years of age have a higher value of gingival inflammation and plaque index scores.(Novanta, 2015, p. 3) Both of which if not treated correctly may progress to juvenile periodontitis.

CONCLUSION

Overall children may be more prone to juvenile periodontitis if they have inherited or natural onset of systemic diseases. There are ways to help prevent the progression which includes maintaining consistent intervals with patients respective dental hygienists. Benefits of receiving frequent dental care involves reinforcement of homecare care which can include learning about different brushing techniques. Out of which the modified stillman method happens to be more accommodating as it provides excellent sulcus cleaning and good gingival stimulation. As well as having appropriate dietary intake ratio of protein and complex carbohydrates.If possible frequent testing or screening should be done on adolescents during orthodontic treatment to better prevent juvenile periodontitis but furthermore research is to be done.

REFERENCES

Lin, P. .., et al. “Automatic Methods for Alveolar Bone Loss Degree Measurement in Periodontitis Periapical Radiographs.” Computer Methods and Programs in Biomedicine, vol. 148, Elsevier B.V, 2017, pp. 1–11, doi:10.1016/j.cmpb.2017.06.012.

Alfuriji, Samah, et al. “The Effect of Orthodontic Therapy on Periodontal Health: A Review of the Literature.” International Journal of Dentistry, vol. 2014, no. 2014, Hindawi Limiteds, 2014, pp. 585048–8, doi:10.1155/2014/585048.

Yaacob, Munirah, et al. “Periodontal Diseases in Children and Adolescent with Diabetes Mellitus.” Materials Today : Proceedings, vol. 16, Elsevier Ltd, 2019, pp. 2292–301, doi:10.1016/j.matpr.2019.06.124.

Novotna, Marta, et al. “Periodontal Diseases and Dental Caries in Children with Type 1 Diabetes Mellitus.” Mediators of Inflammation, vol. 2015, Hindawi Limiteds, 2015, pp. 379626–28, doi:10.1155/2015/379626.

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