



The Casual Relationship Between Malocclusion and Breathing Problem

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ABSTRACT

Background: Breathing problems is one of the most common causes of malocclusion specially in Children. Many of these children are misdiagnose. It is important for the entire health care community (including general and pediatric dentists) to screen and diagnose for breathing problem in children and adults between 5 to 16 years of age. If mouth breathing is treated early, its negative effect on facial and dental development and the medical and social problems associated with it can be reduced.

Method: Breathing problem can cause malocclusion between children to early adult, so the sample was collected between the ages of 5 to 16 years of 20 patients, from Department of dentistry, National Medical College, Birganj Nepal.

Result: Untreated 20 patients, sample were collected between the ages of 5 to 16 years of 20 patients with a mean age of 11.64 years. The sample was divided into 2 groups with 10 subjects in each, group 1 had history of no breathing problem had Dental Class I malocclusions and normal growth patterns; group 2, had nasal obstruction and Dental Class II malocclusions and vertical growth patterns as evaluated (molar relationship) on dental casts and lateral cephalogram.

Conclusion: Above study shown that breathing problem can causes malocclusion like Dental class II malocclusion, vertical growth pattern with long, narrow faces, narrow mouths, high palatal vaults, gummy smiles, and many other unattractive facial features.

Keywords: Breathing problem, Dental caste, Knowledge, Lateral Cephalograms, Malocclusion.

INTRODUCTION

The obstruction of upper airways, resulting in mouth breathing, changes the pattern of craniofacial growth (Harvold EP, Tomer BS, et al. 1981) with typical facial features and dentition: long face, contraction of the upper dental arch, high arched palate, gummy smile, dental malocclusion both Class II and Class III .(Harari D, Redlick M, et al. 2010).In mouth breathing, compared to the general population, a higher prevalence of vertical growth pattern and Class II malocclusion is seen (Souki BQ, Pimenta GB, et al. 2009).

It has long been assuming, but never demonstrates, that malocclusion may be one of the outcomes of exposure to breathing problem. The aim or objective of this study is important because majority of health care professionals are unaware of the negative impact of breathing problem on normal facial growth and physiologic health, if it will be proved that the breathing problem can cause malocclusion, can be present to occur of the said sequel. Children whose breathing problem is untreated may develop long, narrow faces, narrow mouths, high palatal vaults, dental malocclusion, gummy smiles, and many other unattractive facial features and high prevalence of Vertical growth, Dental Class II, Class III Malocclusion. These children do not sleep well at night due to obstructed airways; this lack of sleep can adversely affect their growth and academic performance. Many of these children are misdiagnose with attention deficit disorder (ADD) and hyperactivity (Jefferson Y, 2010). It is important for the entire health care community (including general and pediatric dentists) to screen and diagnose for breathing problem in adults and in children as young as 5 years of age. If mouth breathing is treated early, its negative effect on facial and dental development and the medical and social problems associated with it can be reduced or averted.

MATERIALS AND METHODS

The sample comprised 20 untreated patients with the history regarding breathing, Age between 5 to 16 years with a mean age of 11.64 years. Sample was collected from department of dentistry National Medical College Birganj. The sample was divided into 2 groups with 10 subjects in each group. In group1, there were no history of breathing problem, no clinical signs or symptoms of pharyngeal pathology, no complaints of nasal obstruction, Class I malocclusions as evaluated on dental casts (molar relationship) and, normal growth patterns on lateral cephalogram were revealed. In group II, there were complain of nasal obstruction, clinical sign and symptom of pharyngeal pathology, the volume of air passing through the nose and nasopharynx was limited. As evaluated on dental casts (molar relationship) Class II malocclusions, and on lateral cephalogram, vertical growth patterns were found. Lateral cephalograms and dental caste were obtained for each subject. The cephalometric tracings, landmark identifications, and measurements were performed on acetate paper, using Scotts Analysis. The caste analysis done for molar relationship. Ethical clearance for this study was obtained from the Institutional Review Committee of National Medical College, Birgunj, Nepal.

RESULTS

The sample was divided into 2 groups with 10 subjects in each group. In group I, there were no clinical signs or symptoms of pharyngeal pathology, no complaints of nasal obstruction. On cast analysis (molar relationship) Dental Class I malocclusions. In group II, there were complaining of nasal obstruction, on cast analysis (molar relationship) Dental Class II and Class III malocclusions was found.

Group I. the cephalometric analysis shown:

1. FMA – 25
2. FMA – 23
3. FMA – 24
4. FMA – 24
5. FMA – 25
6. FMA – 26
7. FMA – 27
8. FMA – 23
9. FMA – 25
10. FMA – 24

Normal growth pattern.

Group II, the cephalometric analysis shown:

1. FMA – 29
2. FMA – 30
3. FMA – 32
4. FMA – 31
5. FMA – 30
6. FMA – 34
7. FMA – 33
8. FMA – 30
9. FMA – 32
10. FMA – 30

Vertical growth pattern.

DISCUSSION

The presence of obstruction of the airways, especially at the level of the nose and pharynx, forces the patient to breathe through the mouth Valera FC, Travitzki LV, et al. 2003). Allergic rhinitis and adenotonsillar hypertrophy are the main cause of airway obstruction. They are usually associated with various symptoms: lack of nasal airflow, sneezing, itching, runny nose clear, but also snoring (Skoner DP, 2001).

The association between insufficient nasal breathing and dentofacial morphology has affected the unbalanced muscle function typical of mouth breathing (Solow B, Kreiborhg S, et al. 1977. Rubin RM, 1980). Children with mouth breathing have typical facial features: long face, dark circles, narrow nostrils, transverse contraction of the upper jaw, high arched palate, gummy smile, posterior cross-bite and anterior open-bite (Mocellin M, Fugmann EA, 2000. Reed E, Kiebach TJ et al. 2014). It has also found that mouth breathers have a high prevalence of malocclusion of class II or, sometimes, class III, with vertical growth pattern narrow dental arches and dental crowding (Vig KW, 1998), especially considering the upper arch (Wagaiyu EG, Ashley FP, 1991).

The results of our study agree fully with literature reports: I found that mouth breathing is closely related to vertical growth pattern dental class II malocclusion with long, narrow faces, narrow mouths, high palatal vaults, gummy smiles, and many other unattractive facial features. Therefore, it is necessary to intervene early on etiological factors of mouth breathing to prevent the development or worsening of malocclusion and, if already developed, to correct it by early orthodontic treatment to promote eugenic skeletal growth. Early orthodontic treatments in these young patients are needed to modify skeletal malocclusions: more stable results are achievable; less extractions of permanent teeth are needed with increased parental satisfaction and the length of orthodontic treatments in permanent dentition is sensibly reduced with lower risks of enamel decalcifications and gum diseases after treatment (King GJ, Keeling SD, et al. 1990. Musich D, Busch MJ, 2007).

CONCLUSION

Nepal is underdeveloped country where health care system is not adequate, mostly in rural area. Health care system even gets worse as most of the populations are below poverty line who cannot afford expensive investigation and treatment. It is important for the entire health care community (including general and pediatric dentists) to screen and diagnose for breathing problem in adults and in children as young as 5-16 years of age. Mouth breathing is treated early; its negative effect on facial and dental development and the medical and social problems associated with it can be reduced or averted.

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List of abbreviation:

FMA: Frankfort mandibular plane angle.



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