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Bruxism in children with nasal obstruction

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Child

Summary

Introduction: Bruxism is characterized by repeated tooth grinding or clenching. The condition can occur in all age ranges and in both genders, being related or not to other oral habits.
Objective: The objective of the present study was to investigate the occurrence of bruxism in children with nasal obstruction and to determine its association with other factors.
Methods: Sixty children with nasal obstruction seen at the Otorhinolaryngology Outpatient Clinic of the University Hospital of Ribeirão Preto participated in the study. The data were obtained using a pre-established questionnaire applied to the person responsible and by orofacial evaluation of the patient. The participants were divided into two groups: group with bruxism (GB) as reported by the relatives and with the presence of tooth wear detected by clinical evaluation, and group without bruxism (GWB), consisting of children with none of the two symptoms of bruxism mentioned above.
Results: The presence of bruxism exceeded its absence in the sample studied (65.22%). There was no significant difference ($P < 0.05$) between groups regarding gender, phase of dentition, presence of hearing diseases, degree of malocclusion, or child behavior.
Conclusion: Bruxism and deleterious oral habits such as biting behavior (objects, lips and nails) were significantly present, together with the absence of suction habits, in the children with nasal obstruction.

1. Introduction

Bruxism is a non-functional activity characterized by repeated tooth clenching or grinding which may

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occur during the day or more commonly at night in an unconscious manner [1,2]. Bruxism is classified as centric when tooth clenching occurs in centric occlusion or in maximum intercuspation without sliding, and as eccentric when there is tooth sliding in protrusive and lateroprotrusive positions, causing facet wear usually in anterior and posterior teeth [3]. The etiology of bruxism is considered to be multifactorial, including local [1,4], psychological [1,5–8], and neurological factors [1].

Bruxism may be caused by allergic processes, by asthma and by respiratory airway infection. Thus, bruxism may be a reflex of the central nervous system due to an increase in negative pressure in the middle and/or inner ear caused by allergic edema of the mucosa of the auditory tubes. The disorder of the middle ear would induce a reflex action in the temporomandibular joint (TMJ), stimulating the nucleus of the trigeminus nerve [2]. Other investigators have mentioned the association between bruxism and respiratory problems [5,9–14]. Parafunctional habits have also been detected in children with bruxism, among them suction of a pacifier, nail biting and the habit of biting objects [2,10].

The incidence of bruxism reported in the literature ranges from 5 to 81% of different age ranges, a fact attributed to different methods of investigation [1,6,8,15–18]. A previous study pointed out that subjective symptoms and clinical signs of TMJ disorders, including bruxism, were more common among boys than girls in the 6–8 year age range [19].

An early diagnosis should be made to avoid damage such as dental mobility, headache and traumas. Some authors believe that childhood bruxism does not always need to be treated since the child is in the growing process and is resistant to bruxism [1]. However, if damage to the stomatognathic system is present, occlusal adjustment and orthodontic braces [15], an interdental splint [20], psychotherapy [15,20–22], and exercise [15] are prescribed. Additional therapeutic modalities have been suggested, but there is no consensus about the most efficient one [23].

The objective of the present study was to investigate the occurrence of bruxism in children with nasal obstruction and to determine its association with other factors.

2. Methods

The study was approved by the Research Ethics Committee of the University Hospital, Faculty of Medicine of Ribeirão Preto, University of São Paulo (no. 1959/02) and the persons responsible for the children signed a term of informed consent for their participation in the study.

The study was initially conducted on 60 children of both genders aged 2–13 years with an otorhinolaryngologic diagnosis of nasal obstruction. The children were followed at the Otorhinolaryngology Outpatient Clinic of the University Hospital, Faculty of Medicine of Ribeirão Preto (HCFMRP–USP) from February to June 2002.

2.1. Inclusion criteria

Children who presented nasal obstruction determined by an otorhinolaryngologist were selected. A questionnaire was applied to the persons responsible for the children regarding breathing behavior and the patients were submitted to otorhinolaryngologic physical examination including otoscopy, rhinoscopy and oroscopy. For a more precise diagnosis of the causal factor of respiratory obstruction, the children were also submitted to flexible nasofibroscopy.

2.2. Exclusion criteria

Children with congenital or acquired craniofacial abnormalities, genetic syndromes, neurologic disorders, mental deficiency, and psychiatric disorders of childhood were excluded from the study.

After subject selection, the persons responsible answered a pre-established questionnaire and the children were submitted to orofacial evaluation. The objective of the questionnaire was to obtain data regarding identification, gender, age, report of bruxism, period of occurrence and frequency of bruxism, presence of pain in the masticatory muscles and/or TMJs, presence of deleterious oral habits such as biting of lips, cheeks, objects and nails, and suction (fingers, pacifier), and characterization of child behavior. Orofacial evaluation was performed by the same professional, who recorded type of dentition, degree of malocclusion and presence of tooth wear. The degree of malocclusion was classified according to the classification of the World Health Organization (WHO), the standard adopted by Shinkai et al. [9], i.e., absent/mild (no abnormality, or mild anomalies such as one or more teeth with giroversion or with slight overlap or spacing), moderate-severe (anterior crossbite, open bite, posterior crossbite, marked overbite, and marked jutting of teeth). The presence of tooth wear was determined by the observation of facets for atypical wear that might characterize bruxism.

The subjects were then divided into two groups, i.e., with bruxism (GB) and without bruxism (GWB). Two criteria were used for inclusion in GB: the child