

# An Effective Management Of Children With Bruxism: A Case Report

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*Abstract: Bruxism is defined as a habit of the masticatory system which is non-functional, characterized by tooth grinding or clenching, which occurs during day or night time. The causative factor has been defined as multifactorial, and several other factors are reported in the literature, such as pathophysiological, psychological, and peripheral. In dental clinic is relatively common to observe tooth surfaces with excessive wear on tooth surfaces, along with joint and muscle discomfort, especially in deciduous teeth. This study summaries the knowledge in the literature about the treatment of the sleep bruxism in children. The most widely therapeutic modalities used were restorative treatments, the use of occlusal splints has been reported, and it is necessary a follow up period to evaluate their effectiveness.*

*Keywords: Sleep Bruxism, occlusal splints*

## I. INTRODUCTION

Bruxism is involuntary, excessive grinding, clenching or rubbing of teeth during nonfunctional movements of the masticatory system. In children, the prevalence reported ranges from 7% to 15.1%, with girls apparently more frequently affected. Bruxism can occur during the day or night. Onset of Sleep Bruxism is about 1 year of age soon after the eruption of primary incisors. Bruxism is more frequent during night and varies with the individual and also has emotional or physical stress.

Tooth wear usually caused by bruxism as evidence of wear facets that can localized/generalized ranging from mild to severe. Other trauma to the dentition and supporting tissues include dentinal hypersensitivity, excessive tooth mobility, injury to the periodontal ligament and periodontium, hypercementosis, fractured cusps and pulpitis and pulpal necrosis.

Various theories regarding the etiology of bruxism have been reported and are categorized as follows: psychological and originating within the central nervous system. Before instituting any therapeutic measures, the practitioner must look at all the medical and dental data, as causative factor of bruxism. Therapeutic approaches can include occlusal adjustment of dentition, use of interocclusal appliances, behaviour modification and pharmaceuticals.

Bruxism can occur during day time or night time. According to AASD (American Academy of Sleeping Disorders) proposed the terms Sleep and Awake Bruxism. Bruxism during daytime is commonly as voluntary 'clenching' activity and is also known as 'Awake Bruxism' (AB) or Diurnal Bruxism (DB).

Sleep Bruxism is an oromandibular behaviour that is defined as a stereotyped movement disorder characterized by tooth grinding/ clenching during sleep.

Bruxism has a higher than normal prevalence in special children and has exaggerated dental wear, temporomandibular

joint pain, avulsion of teeth, and other problems. The treatment options for bruxism (eg, the use of splints or behavioral modification techniques) are limited in children. In this case report, we present our experience in delivering, comprehensive dental management in a child with severe bruxism.

#### CASE 1

A 6-year-old female child was brought to DEPARTMENT OF PEDODONTICS & PREVENTIVE DENTISTRY, PANINEEY DENTAL COLLEGE, HYDERABAD, by his parents with complaints of pain of teeth and consequent difficulty in eating.

Clinical examination revealed that the patient had early mixed dentition with Class I molar relationship bilaterally. No malocclusion/midline deviation observed. No occlusal interferences, fair oral hygiene were recorded, carious lesions in relation to 54, 55, 65 and 74 respectively.

The incisal faces of all anterior maxillary primary teeth were badly worn. Worn occlusal facets in teeth 51,52,61,62 and 55 were also present.

Radiographic examination confirmed pronounced wear in the above-mentioned primary teeth; with complain of sensitivity while eating cold food.

The treatment protocol for this patient was bruxism splint placement made of pink colour transparent sheet (eroloc pro) with occlusal clearance of 2 mm, fabricated by vacuum press in which the sheet was heated and sucked over the mandibular model. The trimmed along the gingival margins. It was given primarily for the night use and Follow-up visits were scheduled every third month to verify tooth wear.

#### CASE 2

A 13-year-old male child was brought to DEPARTMENT OF PEDODONTICS & PREVENTIVE DENTISTRY, PANINEEY DENTAL COLLEGE, HYDERABAD, by his parents with complaints of pain and difficulty in eating. There was a history of excessive grinding and clenching of teeth. The patient's medical history was indicative of mental retardation. The history of family was non-contributory. He was not on any medications at the time and had no history of drug allergies. A limited oral examination was performed and it revealed severe attrition of all the permanent teeth the maxillary left permanent central incisor was nonvital and there was an abscess (radiographically) associated with it.

A complete oral rehabilitation was planned A preliminary alginate impression was taken and we performed a full-mouth rehabilitation, including Apexification followed by root canal therapy and thorough oral prophylaxis. On observation his recovery successful postoperatively. The parental counseling was done on the proper oral hygiene measures to be adopted and frequent dental visits in future. The patient was reviewed after 6 months.

## II. DISCUSSION

Etiologic factors that might be associated with bruxism are amply discussed in the literature. Our report focused on 2 children where gnashing caused severe wear of primary and permanent dentition. In both cases, the psychological condition was believed to be triggering factor of the condition, thereby occurring as a result of harrowing.

Furthermore, local factors have played a major /critical role, also different for each patient. Funch and Gale state that bruxism is correlated with psychological factors, indicating the various kinds of life styles the patient leads exerts great influence on the frequency, period and extremity of the condition.

Presumed in all probability bruxism was the condition presented by these patients. Even though tooth wear according to some authors is not reliable indicator of bruxism, both patients exhibited aggressive, almost approaching the dental pulp. Thus, the possibility of physiological wear disposed of. Additionally assertive statements by the parents that the children had episodes of tooth gnashing and pulverizing. Lack of medical and dietary regime of reflux in the patients into account, the possibility of the dental erosion was discarded in accordance with Imfeld and Lussi and others, who have stated that the etiological factors contributing to chemical dissolution of dental enamel in children, are related to either acid diet or medication.

A few studies confirm a higher rate in females than males. However, as certain personalities are characterized of bruxism such as — aggression, anxiety and hyperactivity — mainly triggered by life events, significant differences between sexes are unlikely.

Some authors describe bruxism as a condition of multifactorial causation alliance of psychological, local and systemic factors. Local factors include occlusal interferences, malocclusion and temporomandibular dysfunction.

Soft-based tailor-made bite-plates were prescribed for both children. According to Hachmann and others and McDonald and others, a bite-plate covering the occlusal surfaces of all dentition should be utilized by patients suffering from bruxism to prevent continuous abrasion.

A soft-based material was chosen to protect the primary dentition, as recommended by Casamassimo. Furthermore, the thickness (3 mm) was sufficient to boost resistance to impact and to prevent perforation. McDonald and others recommend that the bite-plate be 2–3 mm thickness and extend from the vestibular region of lingual surfaces.

As this article deals with isolated clinical cases, its findings can't be generalized. Therefore, we recommend further more epidemiological investigations be made to provide an in depth knowledge of the causative factors in bruxism. Considering the problems intrinsic in modern society, bruxism is expanding as a customary malady.

FIGURES

CASE 1



A-Frontal View

B-Pronounced Wear In All Anterior Primary Teeth And Worn Occlusal Facets In Teeth 51, 52, 61, 62 And 64.

C-Frontal View of the Patient's Occlusion.

D- Worn Occlusal Facets in Teeth 72, and 82.

E-Postoperative Intraoral Maxillary View

F-Frontal View Showing Bruxism Splint

G- H- Frontal View Postoperative View Showing Dent care Eroloc Pro (Pink Color) Bruxism Splint

CASE 2



I- Patient's Occlusal view showing fractured left central incisor

J- Patient's Occlusal view

K- Frontal view of patient's occlusion

L- Postoperative View Showing Dent care Eroloc Pro (Blue Color) Bruxism Splint

M-Dent care Eroloc Pro (Blue Color) Bruxism Splint after 6 months

N- Frontal view of patients occlusion after 6 months

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