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Bruxism – A Case Report

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Abstract

Bruxism is defined as a habit of the masticatory system which is non-functional, mainly characterized by tooth grinding or clenching, can occurs during day or night. The causative factor has been defined as multifactorial, and several other factors are reported in the previous reported literature, such as patho-physiological, psychological, and peripheral. In dentistry it could be easily diagnosed due to its relatively common observations like tooth surfaces with excessive wear on tooth surfaces, along with joint and muscle discomfort, especially in deciduous teeth.

The clinical indicators of diagnosing this parafunction condition are the presence of dental wear/attrition and bruxofacets. The disorder appears more frequently in the younger population with the prevalence between 7 10 15.1 children. The present case reported with the chief complains of a 6 year child with pain and inability to eat. An attempt was made to achieve a harmonious oral condition with use of stainless steel crown. A brief review is made of the literature concerning the etiology, clinical diagnosis and the therapeutic approach of the disease.

Keywords: Bruxism, Etiology, Stainless Steel Crown.

Introduction

Bruxism consists in a movement characterized by tooth grinding, attrition or clenching. Tooth grinding is of great importance in dentistry due to the various problems like breakage of dental restorations, tooth damage, induction of temporal headache and temporo-mandibular disorders. The American Academy of Orofacial Pain defines Bruxism as ―diurnal or nocturnal Parafunctional activity which includes clenching, gnashing, gritting and grinding of teeth. It can be clinically diagnosed based on the presence of excessive tooth wear which could not have been caused by mastication.[1] American Sleep Disorders Association talks about ―gnashing or clenching of teeth during sleep, but the diagnosis is made only when at least one of the symptoms exists (tooth wear, noises and sensitivity of the masticatory muscles which cannot be attributed to any other disorder.[2] Glossary of Prosthodontic Terms (GPT-8) defines Bruxism as Parafunctional grinding of teeth or an oral habit consisting of involuntary rhythmic or spasmodic non functional gnashing, grinding or clenching of teeth in other than chewing movements of the mandible which may lead to occlusal trauma.[3]

The term 'la bruxomanie' was first introduced by Marie Pietkiewicz in 1907. It was latter adopted as 'Bruxism' to describe gnashing and grinding of the teeth occurring without a functional purpose. Various authors researched and explain the various type of Bruxism. Thereby, can be classified as:

Bruxism may be classified according to several criteria[4]

A. According To Presence

a. Past Bruxism

b. Present Bruxism

B. According To Etiology

a. Primary, essential or idiopathic Bruxism: No apparent cause is known.

b. Secondary Bruxism: Secondary to disease (e.g. coma, ictus, cerebral palsy), medicinal products (e.g. antipsychotic medication, cardio active medication), drugs (e.g. amphetamines, cocaine, ecstasy).

C. According To Occurrence

a. Awake Bruxism

b. Sleep Bruxism

c. Combined Bruxism

D. **According To Motor Activity Type**

a. Tonic: Muscular contraction sustained for more 2 sec.

b. Phasic: Brief repeated contractions of masticatory musculature with three or more consecutive bursts of EMG activity that last 0.25 - 2 sec.

c. Combined: Alternating appearance of tonic and phasic episodes. Approximately 90% of the episodes of SB are phasic or combined, unlike in awake Bruxism, where episodes are predominantly tonic.

Case Description and Result

The treatment options for bruxism (eg, the use of splints or behavioral modification techniques) are difficult in children. In this case report, we tried to deliver a more comfortable and comprehensive dental treatment to a child with severe Bruxism.

Case

A 6-year-old male child was brought, by his parents with complaints of pain of teeth and consequent difficulty in eating. Clinical examination revealed that the patient had early mixed dentition. No malocclusion/midline deviation observed. No occlusal interferences, but poor oral hygiene were recorded, grossly decayed teeth with root stump was present in relation to 51,62 (Figure 1) . Worn occlusal facets in teeth 54,55,64,65,74,75,84 and 85 (Figure 2 & 3) were also present.

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

The ideal treatment protocol for this patient was Bruxism splint placement made of pink colour transparent sheet (eroloc pro) but as the teeth was already having sensitivity, stainless steel crown placement was considered as interim option till successor teeth erupts to relieve the pain and enhancing the eating ability.

As 51 & 62 were grossly decayed with resorbed roots revelied by radiograph (Figure- 4), thereby there extraction was done.

The appropriate size of stainless steel crown was selected for 54,55,64,65,74,75,84 & 85. Minimal crown preparation in accordance with the standard crown cutting norms for SSC was done (Figure 5 & 6). Contouring was done with Johnsons contouring pliers (API Germany) (Figure 7). Margins of the SSC were crimped to increase the retention with no. 800–417 crimping pliers (API Germany) (Figure 8). The final fit of SSC was found very satisfactory. The SSC was cemented with lusting glass ionomer cement (Fuji I) (Figure 9&10). The patient was reported for follow up with satisfactory result.

Bruxism has a higher than normal prevalence in special children and has exaggerated dental wear, temporal mandibular 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. The prevalence rate of Bruxism in children is estimated to range from 7% to 15.1%. [4]

Sleep Bruxism affects most commonly in an about 1 year of age soon after the eruption of deciduous incisors thereby is appearing more frequently in the younger population.[5] The most common signs and symptoms are the wear of the occlusal/incisal surfaces, fracture of cusps and restorations, pulpal hypersensitivity, tooth mobility, pain and temporomandibular joint disorders, masseter hypertrophy, headache, among others.[6] Etiologic factors that might be associated with Bruxism are already discussed in previous available literature. Our report focused mainly on the child where gnashing caused severe wear of primary and permanent dentition. In this case, the psychological condition was believed to be major triggering factor of the condition, thereby occurring as a result of harrowing.

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.. 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. [7]

Chrome steel crowns was introduced by Humphry in 1950 are extensively used in children and adolescent and are now days commonly known as SSC.[8] The indications for the use of SSC include the restoration of primary and young permanent teeth following pulpal therapy, restoration of the multi-surface carious lesion, hypo plastic teeth, part of space maintainer, etc., It is also used in the treatment of anterior single tooth cross bite and for protection of the fractured tooth.[9] Though it is very popular among pediatric dentistry, its extended use in adult and geriatric patients is limited but in conditions like pregnancy, medically compromised conditions and geriatric patients can be used as option due to the less chair side time and more conservative approach.

Conclusion

In this case report a novel and conservative approach was use to relieve the patient and enhance his ability to masticate. But, more epidemiological investigations need to 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.

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Legends Figures

Figure 1: Pre-Operative Showing Decayed W.R.T 51,62

Figure 2: pre-operative showing occlusal wear W.R.T 54, 55, 64, 65.

Figure 3: Pre-Operative Showing Occlusal Wear W.R.T . 74,75,84,85.

Figure 4: Radiography W.R.T 51,62.

Figure 5: Crown Cutting W.R.T 54,55,64,65

Figure 6: Crown Cutting W.R.T 74,75,84,85.

Figure 7: Crown Contouring

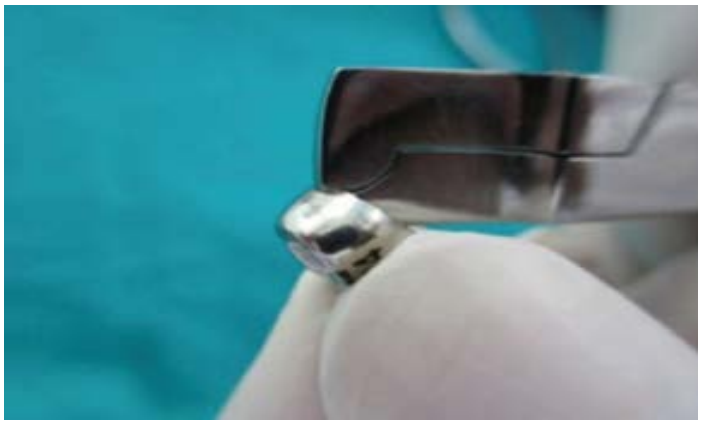

Figure 8: Stainless Steel Crown Crimping

Figure 9: Post-Operative Showing Crown W.R.T 54, 55, 64, 65.

Figure 10: Post-Operative Showing Crown W.R.T . 74,75,84,85.