Management of erosive tooth wear
Manejo do desgaste dentário erosivo

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Abstract
Erosive tooth wear is an oral health problem that worries clinicians and researchers worldwide. The aim of this study is to describe, through a literature review, the erosive tooth wear management. This problem is a challenge for dental surgeons, especially when it reaches more advanced stages, which can cause loss of dental and aesthetic function, as well as generate hypersensitivity to the patient. To prevent the progression of this problem focusing in preventive measures, such as guidelines for feeding and oral hygiene, the dental surgeon must perform early diagnosis to minimize erosive tooth wear damage.

Keywords: Tooth wear; Tooth erosion; Non-carious lesions.

Resumo
O desgaste dentário erosivo é um problema de saúde bucal que preocupa clínicos e pesquisadores no mundo. O objetivo da pesquisa é descrever através de uma revisão de literatura o manejo do desgaste dentário erosivo. Este problema é um desafio para os cirurgiões-dentistas, especialmente quando atinge estágios mais avançados, que podem causar perda da função dentária e estética, além de gerar hypersensibilidade ao paciente. Para evitar a progressão desse problema, com foco em medidas preventivas, como orientações alimentares e de higiene bucal, o cirurgião-dentista deve realizar o diagnóstico precoce para minimizar os danos do desgaste dentário erosivo.

Palavras-chave: Desgaste dos dentes; Erosão dentária; Lesões não-cariosas.

1. Introduction
Dental erosion is a complex and multifactorial oral health problem that affects the hard tissues of teeth\(^1\). This dental wear affects especially children and adolescents with recent changes in lifestyle, mainly because of the high consumption of acidic foods and beverages\(^2,3\).
The erosion is caused by an irreversible chemical process of mineral and superficial structure losses of the teeth due to acid aggression without bacteria involvement and erosive tooth wear is defined as the accelerated loss of dental hard tissue through the combined effect of erosion and mechanical wear (abrasion and attrition) on the tooth surface.

The clinical diagnosis of erosive lesions is based on anatomical and morphological alterations of the tooth and can be observed with the loss of mineral tissue on the surface of the teeth. The acids responsible for the dental surfaces aggression may have an intrinsic or extrinsic origin.

Because of high prevalence, dental erosion has become a concern for patients and dental surgeons, especially when it reaches advanced stages causing loss of function and esthetics of the teeth, moreover hypersensitivity. In these cases, treatment becomes a challenge for health professionals. To avoid the worsening of this problem, dental surgeons can use preventative measures, such as use of fluoride, dietary guidelines and oral hygiene guidelines.

In this context, it is important that the dental surgeon has an understanding and a knowledge of the erosive tooth wear process with an early diagnosis to avoid its progression.

2. Methodology

In this literature review, 33 articles were selected from the following databases: Pubmed, Lilacs, Scielo, Google Scholar, from 1991 to 2021, in Portuguese and English.

3. Literature Review

Erosive tooth wear has a multifactorial character and it is caused by acids that reach the oral cavity and may be of intrinsic or extrinsic origin and the combined effect of mechanical wear (abrasion and attrition). Our body provides an important form of natural protection present in the mouth that is the salivary fluid. The salivary fluid has an important property of neutralizing the acids in the oral environment, known as saliva buffer capacity.

Due to the complexity of the onset of this problem, it is important to consider all factors that may develop it. The following factors may be mentioned: behavioral (type of diet, occupation, drug use, hygiene habits, eating habits), biological (tooth anatomy, biofilm, movements of mouth soft tissue) and chemicals (calcium and phosphate concentrations, saliva buffer capacity, salivary pH). The habit of ingesting citrus foods and drinks enhances erosive wear once it is known that citric acid promotes a chemical effect called a chelate effect. This happens because citric acid binds to calcium ions present in the dental structure and "steals" these teeth minerals. The increased intake of acidic beverages such as soft drinks and artificial juices causes great concern seeing that they are often stimulated and linked to advertisements as being "healthy".

After the correct diagnosis, it is necessary to indicate an adequate treatment plan, which often involves the control of the sensitivity and aesthetic correction, as they can be some of the patient’s main complaints, but mainly the removal of the etiological factor to reach a definitive solution for the problem.

After identifying the etiology of the lesions, it is important to prevent new lesions and to control the progression of existing lesions. To avoid the worsening of this problem, dental surgeons may use preventive measures such as therapeutic use of fluorides and dietary guidance. The use of fluoride is indicated for patients with disequilibrium in the demineralization-remineralization process of the tooth that occurs in dental erosion. There are several methods of use such as: fluoride gel, fluorine varnish, fluoridated dentifrices and mouthwashes that should be used in an individualized indication and only until the balance of this des-re process occurs.

Because dental erosion wear presents few clinical signs and no painful symptomatology, the early diagnosis of it is underestimated. Erosive lesions are difficult to diagnose, as they are often easily confused with other types of dental lesions.
such as non-carious lesions. In cases of hypersensitivity the use of fluorides and desensitizers should be evaluated together with the guidelines related to diet and oral hygiene.

Currently several indexes are used to diagnose and classify dental erosion. The BEWE index, is indicated for both epidemiological studies and private practice, since it is simple and easy. Besides, it indicates the severity of the dental erosion and it also proposes a treatment. Olley et al., 2014 validated the BEWE sextant cumulative score. This score appears to provide a simple method to alert clinicians to the erosive tooth wear process.

The restoration of erosive lesions should be considered only in severe cases, when loss of aesthetics and function occurs. Composite resins, glass ionomer and even crowns can be used for the patient but it is important to highlight that the disease will continue to progress if there is no control of the etiological factor.

Early diagnosis is essential for damage to be minimized, as the progression of the problem leads to the appearance of new lesions along with enamel dissolution and dentine exposure, with the possibility of complete destruction of the tooth crown and pulp involvement. Patients and/or caregivers rarely recognize the initial signs. Thus, it is up to the professionals to seek the characteristics of the erosive lesion on clean, dry and well-lit surfaces.

This dental health problem is becoming a concern and reality mainly for dental surgeons, who in recent years try to understand more about this process through research, for improvements in diagnosis, prevention and treatment of erosive tooth wear.

It is important that Dental education, in person or remotely, must transmit these guidelines so that they are applied in professional practice.

4. Conclusion

The dental surgeon must have an understanding of erosive tooth wear in order to perform the early diagnosis of erosive lesions, in view of the extremely importance to reach a better prognosis in the treatment of the oral health problem.

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