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Anorexia nervosa and purgative-type bulimia nervosa: a fundamental role of the dental surgeon in diagnosis and treatment

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Abstract

Introduction: In a world where appearance is considered above all by most people. It is in this unbridled search that some people end up acquiring eating disorders. Anorexia nervosa and purgative-type bulimia nervosa are diseases that are rarely taken into account in the first clinical assessment of the patient. Bulimia nervosa and Anorexia nervosa are eating disorder that causes serious physiological problems in the oral cavity, due to saliva calcification caused by frequent vomiting. **Objective:** it was to bring into discussion, through a literature review, the meticulous look that the dental surgeon must-have when performing the clinical examination and that he can be the first source in detecting signs of eating disorders and their clinical manifestations in the patient and so can forwards it to a multidisciplinary team for better diagnosis and treatment. **Methods:** This study followed an integrated literature review model and articles dating from 2001 to 2021 in English and Portuguese were selected. In virtual databases such as Scielo and PubMed. **Results and Conclusion:** The dental surgeon plays an important role in the team, controlling the development and progression of oral manifestations. Pass the oral hygiene guidelines, apply substances that can control the acids that are present in oral fluids; use salivary substitutes that can help reduce erosive wear. And always encourage this patient to come back for treatment. In extreme cases of damage to the dental structure, functional and anatomical, restorative or rehabilitative treatment is chosen. Recover form, function, esthetics and eliminate hypersensitivity and facilitate cleaning. The dental surgeon must be able to assess and diagnose the manifestations arising from eating disorders. Because it is the first professional to be able to detect and thus refer to a team of multi-professionals such as a psychologist, nutritionist, doctor and manage to perform the best possible treatment simultaneously and, through preventive and rehabilitative procedures, be able to return a better quality of life to the patient.

Keywords: Bulimia nervosa. Anorexia nervosa. Dental erosion. Perimolysis. Oral health. Dental Care.

Introduction

In a world where appearance is taken into consideration above all by most people and the pressure to try to be what you see on TV and especially on the internet, the race for the ideal and perfect aesthetic ends up breaking harmful limits [1,2]. Thus putting the health of the individual at risk in his search for the "ideal" body. And it is in this unbridled search that some people end up acquiring eating disorders. Through studies it was found that people who follow strict diets have a high chance of developing these disorders, they are 18 times higher than those who maintain a normal diet in their daily lives [3,4].

Anorexia nervosa and purgative-type bulimia nervosa are diseases that are rarely taken into account in the first clinical assessment of the patient. These eating disorders are caused by psychiatric disorders in young people and adults, especially females, socially and biologically impairing the lives of individuals with these disorders [5-7]. The dental surgeon is the first professional who can perceive the signs and symptoms

of these. And in addition to evaluating the clinical signs, one must also take into account the patient's behavior before the consultation [8,9]. However, not every professional knows how to correctly assess these diseases [10].

Bulimia nervosa and Anorexia nervosa are eating disorder that causes serious physiological problems in the oral cavity, due to saliva calcification caused by frequent vomiting. Changes in this pH are many and have great consequences. Anorexia nervosa is the third most common chronic disease among adolescents and, according to the WHO, in a sample of 14 different countries, bulimia affects 1% of female adolescents [1,4,5].

These eating disorders tend to affect mostly females who tend to have many indications in the oral cavity, and that is why the dental surgeon must be able to identify them during the anamnesis, investigate, cautiously obtain information about the disease, know how to differentiate eating disorders and the cause of tooth tissue loss, in addition to referring the patient to a multi-professional treatment to help him, and thus obtain an effective restorative treatment. Because emergency care (pain relief), patient education about health and oral hygiene, pre-restorative care, and maintenance restorations, combined with multidisciplinary treatment to fully rehabilitate the patient, must be involved [3,10-12].

Therefore, the objective of this work was to discuss, through a literature review, the detailed look that the dentist must-have when performing the clinical examination and that he can be the first source to detect signs of eating disorders and their clinical manifestations in the patient and can thus refer him to a multidisciplinary team for better diagnosis and treatment.

Methods

This study followed an integrated literature review model and articles dating from 2001 to 2021 in English and Portuguese were selected. In virtual databases such as Scielo and PubMed where the following descriptors were used "*Bulimia nervosa; Anorexia nervosa; Dental erosion; Perimolysis; Oral health; Dental Care*".

Results and Discussion

Summary

In Brazil, there are few studies, mainly at the population level, and the development rates for anorexia range from 4.9% to 25%. The clinical signs for the diagnosis of eating disorders depend on the ethnic group, age, occupational activity, and degree of urbanization [11].

Eating disorders are psychiatric conditions that cause serious psychological damage and are potentially fatal, occurring more often in female adolescents and young adults. These disorders can manifest in different ways, intensities and severities, and it can be either with weight loss or gain [7,11,13].

A patient's oral health reveals much more than just brushing and flossing. Through the mouth, it is possible to end up identifying several alterations and with the acquired knowledge, we can be diagnosing or refer the patient to the proper treatment. Through this work, we will talk about eating disorders and their oral manifestations. In the diagnosis and statistical manual of mental disorders, two specific diagnoses are presented, which are: anorexia nervosa and bulimia nervosa, which are linked by the same common psychopathology: the unbridled concern for weight loss and the use of methods harmful to health [10,11].

The purgative method, such as the induction of vomiting that occurs in patients with anorexia and bulimia nervosa, exposes the tooth structure often with acidic fluid from the stomach, this can result in erosion lesions, wear that defines the loss of tooth structure or other manifestations orals such as xerostomia [4,5,8].

After the vomiting episodes, the patient with these disorders, to alleviate the unpleasant taste, performs several brushings, which can lead to tissue loss and severe dental abrasion. These patients' nutrient absorption deficiency manifests in the oral cavity as erythematous lesions on the palate, tongue inflammation with erythema, and atrophy [10,11,14].

Anorexia

The first report of anorexia nervosa was in 1684 by Morton, defined as an eating disorder associated with anxiety in young women called "nervous consumption" [15]. This disorder can be diagnosed in most cases with anorexia nervosa, which is characterized by the distortion of the image of the body itself, an unbridled search for thinness through strict diets, alteration of the menstrual flow leaving it unregulated with the absence of at least three consecutive cycles and loss of libido are one of the most distinct characteristics. It should also be noted the frequent symptoms of anorexia nervosa which are constipation, pain in the abdomen, feeling of gastric fullness, feeling very cold, fatigue, alopecia, and difficulty concentrating [6,7,11,15].

Anorexia nervosa can be divided into two types, purgative anorexia nervosa, in which the individual uses techniques such as self-induction of vomiting or use of medications such as laxatives in order to purge the

ingested food. And restrictive anorexia, where the individual is forced to make extremely strict diets combined with extreme physical exercise without using the purgative method [7,11,15].

Patients who use the method of self-inducing vomiting by constantly introducing the hand to the mouth usually have ulcers and calluses on the dorsal surface of the hand. This sign is known as the Russell Sign [2,5,14]. An individual with a BMI below 16 kg is considered malnourished and when it is below this limit, the changes are more apparent.2 Studies show that 1% of women between 12 and 25 years old suffer from this condition and are even more likely to be in the upper class. For every 100,000 people, it affects about 0.24 to 7.3 individuals per year. And its appearance usually occurs among people aged 14 to 18 years [11].

Anorexia nervosa and purgative-type bulimia nervosa are diseases that are rarely taken into account in the first clinical assessment of the patient. These eating disorders are caused by psychiatric disorders in young people and adults, especially females, socially and biologically impairing the lives of individuals with these disorders. The dental surgeon is the first professional who can perceive their signs and symptoms, as they are clearly manifested in the oral cavity. And in addition to evaluating the clinical signs, the patient's behavior during the consultation must also be taken into account. However, not every professional knows how to correctly assess these diseases [11,12,16].

Bulimia

Bulimia presents itself through episodes of self-induced vomiting after the individual has ingested large amounts of calories and motivated by feelings of guilt and concern about weight gain, he ends up resorting to some purgative method, either through the use of medication or by example laxatives, appetite suppressants or induction of vomiting, fasting, and excessive exercise. In the case of induced vomiting, usually, the patient who suffers from this disorder and uses this purgative method frequently may present the Russell sign on the back of the hand [7,5,11,15].

It is common in these patients the night eating syndrome, which is nothing more than a lack of dietary control in relation to anxiety that is associated with psychological stress and sleeps disturbance. It is characterized by food intake at bedtime and during periods of awakening during the night. The oral manifestations of eating disorders depend on the type and duration of the disorders presented by the patient [15,16].

Studies show that bulimia nervosa may have a 1 to 4.2% chance of developing in females [7,10]. And that also 25 to 30% of cases already have a history of previous anorexia. Bulimia is usually more difficult to identify than bulimia, as the signs are usually not as clear at the onset of the disease and may appear to be of normal weight [8]. Bulimic individuals may vary by 10% from the ideal weight [5].

These eating disorders, such as anorexia and especially bulimia, can cause manifestations not only in the individual's general health but also in oral health. These manifestations can be characterized by dental erosion/perimolysis, increased salivary glands, xerostomia, periodontal disease, ulcers, cheilitis, increased caries index [8,11].

Perimolysis/Dental Erosion

Dental erosion affects about 2% to 4% of adult women. And it happens due to the loss of dental tissue through an acidic substance through a chemical process, without the action of bacteria. This substance is the gastric juice that comes into contact with the dental elements through vomiting. Usually, the most affected faces correspond to the palatal face of the superior anterior element and the lingual face of the inferior posterior element. On the other hand, the lower anterior lingual surfaces are not so affected due to the presence of the tongue and the buffering effect of saliva in the area [5,8,9]. The teeth also show loss of shine, loss of vertical dimension, smooth surface in the shape of a "U" or saucer, change in color, and no sharp angles. Thin or fractured incisal edges and presence of diastemas. Sensitivity to cold or heat may also occur due to loss of tooth tissue [13,16-18].

These clinical characteristics, according to an article by Popoff DAV et al 2010 [17], can be divided into degrees of severity:

- Surface Class 1: Affects only the enamel surface;
- Localized Class 2: Affects less than 1/3 of dentin;
- Extensive Class 2: Affects more than 1/3 of the dentin.

Parotid gland enlargement

It is characterized by swelling of the parotid glands due to vomiting induced by bulimic patients, affecting the gland unilaterally or bilaterally. Generating facial deformation, leaving the face swollen and the jaw square [10,14,21]. The more frequent the vomiting, the sharper and more swollen the glands become. Generally, this pathogenesis occurs in 10 to 50% of patients, even causing xerostomia and, in rare

situations, it can also affect the mandibular glands. The treatment for this manifestation would be the suspension of vomiting [6].

Xerostomia

It presents with the decreased salivary flow or dry mouth sensation. It can be due to two factors, by inducing vomiting or using medication such as laxatives, diuretics, or even treatment medication such as antidepressants. To stimulate and increase the flow of saliva production, the patient can be instructed to chew sugarless gum or, in serious cases, artificial saliva can be used [6,8,10].

Sensitivity

Due to erosion, the patient can end up suffering from dentin sensitivity due to dentin exposure resulting from the loss of enamel tissue. In 47% of patients, this manifestation is common [6].

Periodontal Disease

Because individuals with these disorders are very young, the controversy regarding the presence of periodontal disease, be it periodontitis or gingivitis. As it is an inflammatory disease, it affects the supporting tissues such as periodontal ligament, cement, alveolar bone, and gingiva [19,20]. Gingival recession hypertrophied interdental papillae, and gingivitis is usually clinically found due to lack of hygiene, abrasive force when brushing teeth after vomiting episodes, and also the gastric juice present in vomiting that causes chronic gingival irritation and bleeding [2,13,16].

Soft Tissue Injuries

In the soft tissue, some changes may occur, such as cheilitis, which is nothing more than inflammation or a fissure in the labial corners due to the individual's poor nutrition. Development of ulcer, which is a progressive degeneration of the lining epithelium resulting from self-induced vomiting from objects or even candidiasis due to decreased saliva and nutritional deficiency, these changes serve as a base example of some lesions that occur in the soft tissue [6, 11,20,22].

Dental Cavity

The development of caries in patients with eating disorders remains unclear. However, bulimic patients are more likely to develop due to their diet rich in carbohydrates and sugars, and adding binge eating and low saliva production creates a prone environment for its development, which is associated with xerostomia [6,11,21,22].

Throat

Due to self-induced vomiting, damage to the larynx, pharynx, and vocal cords occurs due to stomach acid. It causes cough, inflammation, sore throat, difficulty in swallowing, and hoarse voice [2,14].

Bruxism

It is a clinical sign of emotional and psychological stress characterized by the parafunctional habit of grinding teeth, squeezing or touching them, causing pain in the chewing muscles and neck pain, limited range of motion of the jaw and worsening of oral health [3,11,14].

Conclusion

The dental surgeon plays an important role in the team, controlling the development and progression of oral manifestations. Pass the oral hygiene guidelines, apply substances that can control the acids that are present in oral fluids; use of salivary substitutes that can help reduce erosive wear. And always encourage this patient to come back for treatment. In extreme cases of damage to the dental structure, functional and anatomical, restorative or rehabilitative treatment is chosen. Recover form, function, esthetics and eliminate hypersensitivity and facilitate cleaning. It is essential that the dental surgeon is able to assess and diagnose the manifestations arising from eating disorders. Because it is the first professional to be able to detect and thus refer to a team of multi-professionals such as a psychologist, nutritionist, doctor and manage to perform the best possible treatment simultaneously and, through preventive and rehabilitative procedures, be able to return a better quality of life to the patient.

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No additional data are available.

Conflict of interest

The authors declare no conflict of interest.

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