

Oral Health in Patients with Eating Disorders: Current Evidence, Diagnosis, and Management

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ABSTRACT

Eating disorders (EDs) are severe psychiatric disorders associated with abnormal eating behaviors and significant systemic complications. The prevalence of anorexia nervosa, bulimia nervosa, and binge-eating disorder has increased among adolescents and young adults globally. Oral manifestations are among the earliest clinical indicators of EDs and frequently serve as diagnostic clues for dental professionals. Dental erosion, xerostomia, salivary gland enlargement, periodontal disease, mucosal lesions, and dentinal hypersensitivity are commonly associated with chronic nutritional deficiencies and recurrent vomiting behaviors. Recent systematic reviews have highlighted the importance of early oral screening and multidisciplinary management in improving overall patient outcomes. This review summarizes the current evidence regarding oral manifestations of eating disorders, diagnosis, and management strategies.

Keywords: Eating disorders, oral manifestations, dental erosion, bulimia nervosa, anorexia nervosa, xerostomia.

INTRODUCTION

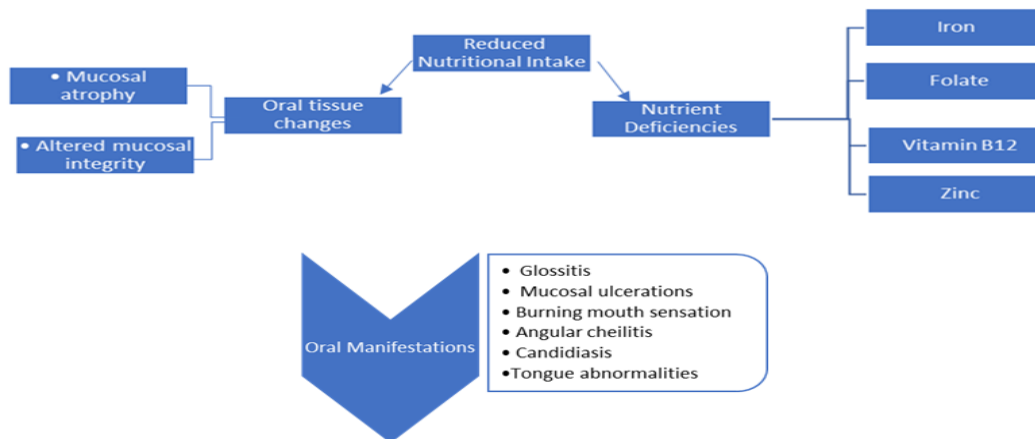
Eating disorders (EDs) are psychiatric conditions characterized by abnormal eating behaviors and distorted body image that adversely affect both physical and psychological health.[2] The most common subtypes include anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED), with increasing prevalence among adolescents and young adults over the past few decades. [1,2]

Oral complications result from recurrent vomiting, nutritional deficiencies, dehydration, altered salivary function, and poor oral hygiene practices.[3] As these manifestations often precede the systemic diagnosis, dentists play a pivotal role in the early recognition of EDs. Early identification can help prevent irreversible oral damage and improve patient outcomes. [1,3]

Oral Mucosal Manifestations:

Nutritional deficiencies commonly associated with EDs frequently present as angular cheilitis, glossitis, oral candidiasis, and recurrent oral ulcerations. Deficiencies of iron, folate, vitamin B12, and zinc may lead to mucosal atrophy, burning mouth symptoms, depapillation of the tongue, and impaired mucosal integrity.[8] Patients with recurrent binge-purge behavior may also develop erythematous lesions and traumatic ulcerations of the soft palate due to repeated mechanical injury and the corrosive effects of gastric acid.[4]

Flowchart of Nutritional Deficiency and Oral Manifestations



Oral mucosal manifestations associated with eating disorders



Oral mucosal lesion presenting as a localized ulcerative lesion



Angular cheilitis showing erythema and fissuring at the oral commissures

ORAL CANDIDIASIS:

Oral candidiasis is reported more frequently in adolescents with anorexia nervosa.[5] Nutritional deficiencies, reduced salivary flow, and mucosal trauma predispose these patients to opportunistic *Candida albicans* infection.[6] In addition, anorexia has been associated with increased colonization by non-*albicans* *Candida* species, including *C. glabrata* and *C. dubliniensis*, suggesting that purging behaviors may disrupt the normal oral microbiome and increase susceptibility to fungal infections.



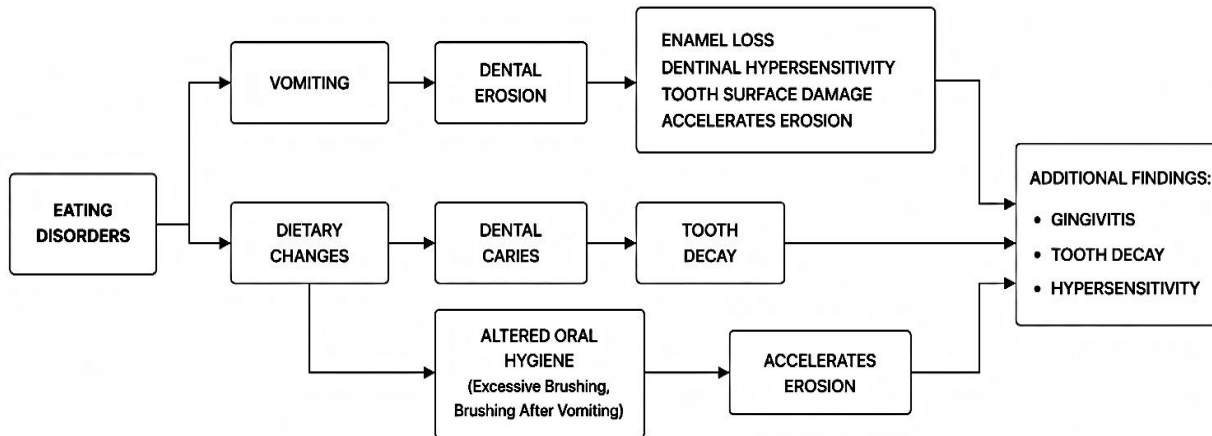
Glossitis showing erythematous and depapillated areas on the dorsal surface of the tongue.



loss of filiform papillae with a smooth, erythematous area on the lateral surface of the tongue.

TONGUE MANIFESTATIONS: Tongue changes commonly include glossitis, atrophy of the lingual papillae, glossodynia, dysgeusia, hypogeusia, and burning sensations involving the tongue and palate.[7]^[B] Glossitis associated with eating disorders.

Dental Manifestations:



Pathways of Eating Disorders Leading to Oral Manifestations

Dental Erosion:

Dental erosion is one of the hallmark oral manifestations of EDs, particularly in patients with anorexia nervosa and bulimia nervosa. A systematic review demonstrated a significantly higher risk of erosion in individuals with eating disorders than in healthy controls.[9] Although most pronounced in patients with self-induced vomiting, erosion may also occur in those without purging behaviors. The palatal surfaces of the maxillary anterior teeth are most commonly affected because of repeated exposure to gastric acid.[10]

Unlike attrition, acid-induced erosion produces smooth, polished enamel surfaces.[11] Repeated vomiting progressively increases the severity of enamel loss and contributes to dentinal hypersensitivity, dental caries, and tooth structure destruction.[12]



Palatal dental erosion affecting the maxillary anterior teeth

Occlusal dental erosion showing enamel loss and cupping defects on the posterior teeth

Dental erosion associated with eating disorders



Dental Caries:

Dietary habits and altered oral hygiene practices further increase the risk of dental caries. Frequent intake of acidic, carbonated, caffeinated, and sugar-rich foods and beverages, together with brushing immediately after vomiting, accelerates enamel demineralization. Similarly, patients with avoidant/restrictive food intake disorder (ARFID) often consume carbohydrate-rich diets that predispose them to dental decay. Regular dental examinations and preventive care are therefore essential for individuals with suspected or diagnosed eating disorders.[10]

Periodontal Manifestation

Gingivitis and periodontitis are common periodontal complications, particularly among adolescents with anorexia nervosa.[13] Malnutrition and impaired immune function increase susceptibility to gingival inflammation and periodontal breakdown. Rang *et al.* reported that among patients with anorexia nervosa, 33.3% experienced xerostomia, 47.3% had gingival bleeding during brushing, and 37.5% reported dentinal hypersensitivity.[13]

Periodontal manifestations associated with eating disorders



Gingivitis showing inflamed gingiva with plaque and calculus accumulation

Gingival recession showing apical migration of the gingival margin with root surface



Salivary Glands Manifestation

Xerostomia:

Xerostomia is one of the most frequently reported oral manifestations in patients with anorexia nervosa.[14] Chronic dehydration, malnutrition, prolonged fasting, and medications such as selective serotonin reuptake inhibitors (SSRIs) contribute to reduced salivary flow.[9] Dry mouth not only causes discomfort and difficulty in speaking and swallowing but also increases the risk of dental caries, oral infections, and delayed woundhealing.[15]

Alterations in salivary composition and enlargement of the parotid glands are also observed, particularly in patients with recurrent binge-purge behaviors.[16] While early glandular enlargement may be reversible, prolonged disease can result in permanent sialadenosis. This condition is thought to arise from peripheral autonomic neuropathy, leading to abnormal acinar protein accumulation, impaired secretion, and parotid gland hypertrophy.[16] Degenerative changes affecting sympathetic innervation and myoepithelial cell function further reduce salivary secretion and contribute to glandular dysfunction.[7]

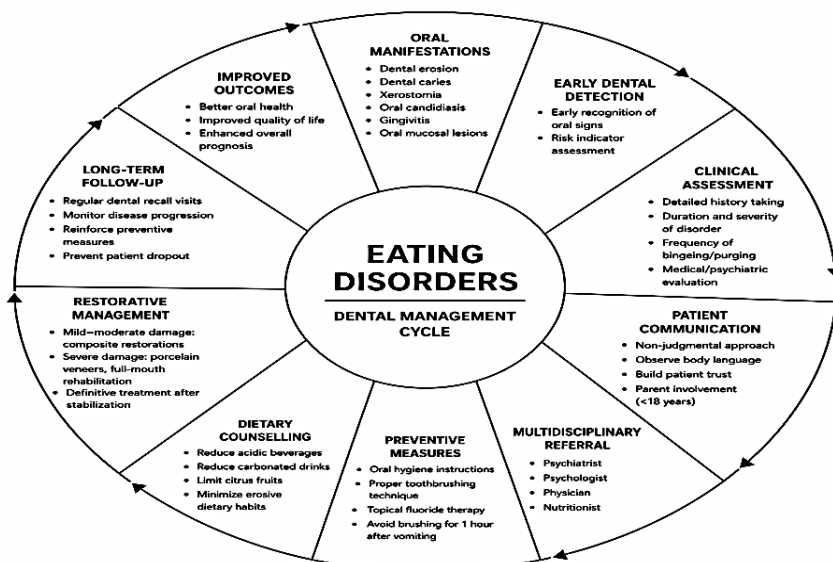
Management

Eating disorders can produce oral manifestations at various stages of disease progression, with early signs such as sialadenosis and palatal erythema often serving as the first clinical indicators. Since many affected individuals conceal their condition and avoid seeking medical care, dentists are frequently the first healthcare professionals to recognize these changes, making early diagnosis and intervention essential.[17]

A thorough yet empathetic history should include questions about the duration of the disorder, the frequency of bingeing or purging episodes, and the patient's current medical or psychological treatment. If an eating disorder is suspected, referral to a psychiatrist, psychologist, or physician is recommended. For patients younger than 18 years, clinical concerns should be discussed with their parents or guardians.[18,19]

Patients with eating disorders are at increased risk of dental caries and erosion due to frequent consumption of carbohydrate-rich foods and acidic beverages. Preventive care should focus on reinforcing oral hygiene practices, daily fluoride use, and dietary counseling to reduce acidic food and beverage intake. Customized trays with 1.1% neutral fluoride gel may be beneficial in high-risk individuals.[20,21]

Definitive restorative treatment should ideally be postponed until the eating disorder is medically and psychologically stabilized. Depending on the severity of dental damage, treatment may range from simple composite restorations to comprehensive rehabilitation. Regular dental follow-up and recall visits are essential for monitoring oral health, reinforcing preventive measures, and supporting long-term patient care.[22,23]



The circular diagram illustrates the integrated dental management approach for patients with eating disorders, emphasizing the continuous process of diagnosis, prevention, treatment, and long-term care.

CONCLUSION

The dental profession holds a significant and often underappreciated responsibility in the early identification and comprehensive management of patients with eating disorders. A combination of clinical vigilance, compassionate communication, preventive care, timely restorative intervention, and multidisciplinary collaboration is essential to address the complex oral and systemic needs of this vulnerable patient group.

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