INTRODUCTION

Eating disorders are a serious concern in one’s health and a clinical challenge to dental professionals. Eating disorders are a group of psychopathological disorders affecting patient’s relationship with food and his/her own body, which is manifested by distorted or bizarre eating behavior. They include anorexia nervosa, bulimia nervosa and eating disorder not otherwise specified. Eating disorders represent a vain attempt to cope with or to suppress personal conflicts and problems through preoccupation with food intake and body weight. The role of dentist, as case finder, is important because by obtaining a comprehensive medical history, measuring vital signs, performing a head and neck examination and complete intraoral examination and interacting with the patient, the dentist may be the first professional to detect clinical findings involving oral mucosa, teeth, peridontium, salivary glands and perioral tissues. It is, therefore, desirable that dental practitioners should have comprehensive knowledge of oral manifestation of eating disorders to diagnose and influence progress of the medical and psychological management by providing support and dental care.

ETIOPATHOGENESIS AND PREVALENCE

The cause of these eating disorders is unknown. Genetic, cultural and psychiatric factors appear to play a role in the etiology of these disorders. Some nonspecific risk factors that increase vulnerability to psychological disturbance which leads to eating disorders, are sexual or physical abuse and a family history of mood disturbance. The prevalence of psychosomatic eating disorder is very high in industrialized countries and has increased in recent years. Women account for the vast majority of cases about 90%, fewer than 10% are men with total prevalence of 0.5 to 1%. The prevalence of bulimia is approximately 1 to 5% for the most populations. Approximately 40 to 50% of patients suffering from anorexia are also bulimic.

DIAGNOSTIC CRITERIA

The diagnostic criteria of anorexia nervosa are:

a. Refusal to maintain body weight at or above a minimally normal weight for age and height.

b. Intense fear of gaining weight or becoming fat, even though underweight.

c. Disturbance in the way in which one’s body weight or shape is experienced, undue influence of body weight or shape on self evaluation, or denial of the seriousness of current low body weight.

d. In postmenarcheal female amenorrhea, i.e. the absence of atleast three consecutive menstrual cycles.

The diagnostic criteria of bulimia nervosa are:

a. Recurrent episodes of binge eating. An episode of binge eating is characterized by the following:

i. Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.

ii. A sense of lack of control over eating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).

b. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, enemas, or other medications; fasting; or excessive exercise.

c. The binge eating and inappropriate compensatory behaviors both occur, on average, atleast twice a week for three months.

CLINICAL FEATURES

Anorexia nervosa and bulimia nervosa are eating disorders usually found in young, previously healthy women of age group 15 to 25 years who develop a paralyzing fear of becoming fat. The onset of the illness usually begins in early adolescence then goes
to remission, only to reappear in early adulthood. The driving force is the pursuit of thinness; all other aspects of life are secondary. Anorexia nervosa may be defined as aversion to food resulting from a complex interaction between biological, social, individual and family factors leading to severe weight loss. Anorexic behavior is characterized by fasting. Despite severe weight loss, patients deny hunger, thinness, or fatigue. They are often physically active, and ritualized exercise is common. Constipation is common. Bulimia patients have a strong fear of putting on weight but initially have occasional episodes of binge eating, which represents a form of expression of anxiety, depression and loneliness, the perceived loss of control over food intake, so patient eliminates the food that has just been eaten by self-induced vomiting or by means of laxatives. Bulimia nervosa patient has episodes of uncontrolled eating until they start feeling uncomfortable. They eat alone because of embarrassment and feel guilty after overeating. In order to prevent weight gain, they exhibit inappropriate compensatory behaviors like induced vomiting, excessive use of laxative or use of enema followed by massive binge eating.

MEDICAL COMPLICATIONS

In both anorexia nervosa and bulimia nervosa, the disturbed eating pattern leads to medical complications, which are wide ranged like bradycardia, hypothermia and hypotensions. In anorexic patients, there is little or no body fat, menstrual irregularities coupled with ovarian changes, amenorrhea stinting of growth, alopecia xeroci. In case of bulimic patients aspiration, esophageal or gastric rupture, hypokalemia with cardiac arrhythmias, pancreatitis, drug induced myopathy or cardiomyopathy. The use of finger to induce vomiting leads to the “Russel’s Sign”, i.e. callus on the back of hand and fingers due to trauma from maxillary incisors.

ORAL MANIFESTATION

Oral manifestation of ED can occur in any phase of disease progression and they play a significant role in assessment, characterization and prognosis of ED. Dentist examines the patients at frequent intervals and may be the first health care provider to identify the problem and refer the patient for medical management. Oral and dental complications can also be managed by the dentist. So, the dentist should enhance the ability to recognize, diagnose and provide dental treatment to these patients. The impact of eating disorders on the oral soft and hard tissues depends upon the diet as well as the duration and frequency of binge-purge behavior. Oral manifestations occurring in ED are mainly caused by nutritional deficiencies and consequent metabolic impairment.

Dental Erosion

The impact of eating disorder upon oral health was initially reported by Hellstrom and Hurst et al. The specific type of enamel erosion seen in these patients is termed as perimyolysis, which is secondary to vomiting, gastric reflux and regurgitation. When case control studies were undertaken, patients with anorexia nervosa and bulimia nervosa demonstrated higher levels of tooth wear than the controls, but the frequency, duration and a total number of vomiting episodes were not linearly associated. In addition, it may develop secondary to the frequent use of acidic sports drinks during physical activity, abnormal use of some caffeinated and D or carbonated drinks used to boost energy levels or to decrease the reflex hunger stimulus by increasing dilation of the stomach, consumption of alcoholic beverages for energy and stimulation and it may be a cofactor for purging and the use of vinegar and lemon juice eliminates the gustatory phase of mechanism regulating hunger. Severe erosion can cause increased tooth sensitivity to touch and cold temperature, the incisal edges of the anterior teeth become eroded and shorten the clinical crowns of teeth. The erosion may progress to the posterior region resulting in a decreased vertical dimension.

Dental Caries

Prevalence of dental caries among eating disorder patients and normal population remains unclear. Caries experience was no different between vomiters and non-vomiters. In one study there was no statistically significant difference between control and bulimic group. The DMFS scores for control; the bulimic group were significantly higher in the study done by Rolf and Ohm. The number of decayed untreated surfaces was significantly higher among the patients with eating disorder indicating their reluctance to seek dental care. Dental caries may be more prevalent in these patients because of high carbohydrate diet, sweetened fruits and carbonated health drinks. Dental caries should be assessed for each patient according to patient’s oral hygiene, diet, malnutrition, genetic predisposition, ingestion of certain types of medication.

Periodontal Disease

The evidence on periodontal status is conflicting. Gingival index scores were not statistically different between groups of anorexics, bulimics and controls. Patients with eating disorder may have poor oral hygiene, which may lead to gingival inflammation and potentially predispose to periodontitis. Nutritional deficiencies especially in vitamin C may also affect marginal periodontium predisposing to gingivitis. The dehydration of oral soft tissues due to salivary gland impairment in addition to dietary deficiencies and poor oral hygiene can adversely impact the health of periodontal tissues and oral mucosa.

Mucosal Lesions

Nutritional deficiencies in eating disorders can lead to angular cheilitis, candidiasis, glossitis and oral mucosal ulceration. Reduced intake of vitamins, iron deficiency anemia may lead to generalized mucosal atrophy, which may also cause diffuse oral burning sensation which can be more intense on tongue. Erythematous mucosal lesions are more commonly seen in patients who engage in binge eating and self-induced vomiting. The soft palate may be injured by objects used to induced vomiting; epithelial erosion may be related to the direct offending action of acid during vomiting.

Salivary Manifestations

Patients with eating disorders frequently have enlarged parotid glands. The onset of swelling usually follows a binge-purge episode. In early stages of eating disorder, the enlargement may
appear and disappear but later on it becomes more persistent. It is because of sialadenosis, a noninflammatory enlargement of the salivary glands caused by a peripheral autonomic neuropathy, which is responsible for disordered metabolism and secretion, resulting in acinar enlargement and functional impairment. It is noteworthy that sialadenosis may also involve minor salivary glands.8,10,15 Salivary flow may also decrease and changes in salivary secretion may be secondary to structural change within the gland. Xerostomia is a common side effect of many psychotropic medications that may be prescribed to treat patients with eating disorders. Fluid imbalance results because of excessive use of diuretics and laxative to prevent weight gain and by persistent vomiting. Lowering of the pH of mucosal surfaces in palate region may be considered reason for minor salivary gland pathologies in the hard palate. Necrotizing sialometaplasia has also been reported in association with bulimia.16

Other Oral Complications

In addition to above-mentioned oral manifestation, some oral manifestations can also be seen like oral burning sensation, dygeusia, unexplained pain, and xerostomia. These can be independent and disconnected from the oral signs commonly seen. These could be psychogenic in origin or may be due to multiple nutritional deficiencies, which can be the predisposing factor for candidiasis, angular cheilitis fissured tongue. In patients with anorexia nervosa osteopenia and later osteoporosis is common and this bone loss can make them susceptible to bone fracture and make the jaws more susceptible to accelerated alveolar bone loss.17

DENTAL MANAGEMENT

Oral manifestations of eating disorder may appear in different stages of disease progression. Some oral manifestations may occur very early during the disease onset like sialadenosis, palatal erythema, etc., so early detection will be valuable in identifying these patients. As these patients often try to keep their food related problems a secret and do not visit medical practitioner for their systemic health, a dentist may be the first physician to notice the aberrant behavior.

While taking history, a dentist should ask additional questions related to eating disorders like duration and severity of the disorder, frequency of bingeing or purging, current status of medical treatment. The dentist should avoid judgment and pressure, observe the patient’s body language and remain calm. This is important in both diagnostic and therapeutic, as the dentist may suggest referring the patient to a psychiatrist, psychologists, or another medical professional expert. In case the patients is younger than 18 years of age, the dentist should discuss his or her findings with the patient’s parents and refer the patient to physician for expert opinion and management. In patients whose diet is rich in carbohydrate and use carbonated drinks juices too much, chances of dental caries and additional erosion of the teeth is present. In these patients, the instructions should be given for self care, maintaining proper oral hygiene, use of dental floss and topical fluoride application can be done. Some researchers recommend custom made trays and 1.1% neutral fluoride gel. The patient should use the tray for 5 min daily. The patient should not brush the teeth within one hour of vomiting or chances of tooth wear increases.8,17,18 Patients need to be educated to reduce intake of acidic drinks and drink alternatives, such as low calorie beverages which still have erosive potential. Patients should be advised to reduce consumption of fresh fruit especially citrus fruit.18 Restoration of dental health is an important part of regaining a normal appearance and may influence the patient’s recovery. But it is recommended to delay all definitive dental treatment until there is control of eating disorder.8,14 Restorative care depends on the severity of hard tissue destruction. Composite restorative procedure can done to reduce sensitivity. Porcelain veneers can be used in anterior region and in severe cases full mouth reconstruction and occlusal rehabilitation are appropriate options.8,5 But extensive oral rehabilitation should be postponed until the psychiatric components of eating disorder are atleast stabilized. Regular dental checkups should be encouraged and using recall system will prevent individual dropout.

CONCLUSION

The oral manifestations of eating disorders are well reported but failure to diagnose the dental component may lead to more serious systemic problems in addition to progressive, irreversible damage to the hard tissues of the oral cavity. Appropriate dental management is based on multidisciplinary facets of these conditions. Coordination between the dental team, psychotherapist and physician is important for managing the patient with eating disorder holistically.

REFERENCES