Communications

Parotid Enlargement in Bulimia

John Paul Brady, MD
Philadelphia, Pennsylvania

The term *bulimia* refers to both a symptom and a disorder. The symptom consists of episodic binging, ie, consuming large amounts of high-calorie foods in short periods of time. Often the behavior is done in secret. Bulimia occurs in about 50 percent of patients with anorexia nervosa, where it is a poor prognostic sign,[1] and is seen as well in persons who are grossly overweight. Bulimia also occurs, however, in persons of normal weight and is often followed by self-induced vomiting to avoid weight gain.

Occasional binging, whether followed by vomiting, is a common practice among women in the United States and other Western cultures. A recent survey in Great Britain reported a prevalence of occasional binging of 21 percent in a large random sample of young women attending a family planning clinic.[2] In some individuals, however, binging becomes increasingly frequent, sometimes occurring many times each day for weeks or months at a stretch. Typically these patients self-induce vomiting after almost every binge to avoid weight gain and may engage in other forms of purging as well (cathartics and diuretics). Such persons become preoccupied and obsessed with their binging and vomiting cycles, guilty over their secret and bizarre eating habits, intensely anxious over the increasing loss of control over their own behavior, and depressed as a consequence. Much social disruption and withdrawal are evident, and they cease to function adequately at work, school, and in other important life areas. This syndrome constitutes the disorder of bulimia.[3]

The prevalence of bulimia is not known, but its prevalence appears to have increased greatly in the United States over the last decade, giving rise to special clinics for its treatment in many large cities as well as to a number of self-help groups around the country. In the Eating Disorder Service at the University of Pennsylvania currently 15 to 20 new cases are seen each month. The condition occurs almost entirely in women, usually between the ages of 15 and 35 years.

In addition to the multiple emotional and adjustment problems these patients evidence, the following medical complications can occur: acute dilatation of the stomach from ingesting large amounts of food over brief periods of time, steatorrhea and related problems from the exces-

From the Department of Psychiatry, University of Pennsylvania, Philadelphia, Pennsylvania. Dr. Brady is Kenneth E. Appel Professor of Psychiatry. Requests for reprints should be addressed to Dr. John Paul Brady, Department of Psychiatry, University of Pennsylvania, 1141 Gates Pavillion, Philadelphia, PA 19104.

sive use of cathartics, irritation of the throat with hoarseness from the repeated effects of acidic vomitus, erosion of the dental enamel from the vomitus, and multiple metabolic disturbances. The most serious of the latter is hypokalemia, again resulting from frequent vomiting. A final complication, the subject of this report, is enlargement of the salivary glands, especially the parotids. The enlargement may be unilateral or bilateral, is usually painless, and is often so slight that the patient may not be aware of the condition until a small tender enlargement is detected by the examining physician. On occasion, however, the swelling can be so extensive as to grossly distort the shape of the face, restrict movement of the head, produce pain, and be a major source of concern and embarrassment to the patient. Because of its relative rarity and the fact that most bulimic patients are highly secretive and defensive about their bizarre eating habits, the condition can present a diagnostic puzzle, as the present case illustrates.

Case Report

When this patient was first seen, she was a 34-year-old married housewife and mother of two young children. She recalled occasional secret binging and vomiting from the age of 15 years. The frequency of binging and vomiting increased during periods of stress. Binging and vomiting became a daily practice when, in her early twenties, she was attending college but living at home in a conflict-ridden environment. When she was 23 years old she first became aware of pain and fullness at the angle of her jaw bilaterally. The swelling of her parotids waxed and waned over the next four years, the enlargement sometimes reaching 10 cm in diameter on both sides. This symptom was a source of great distress, as it gave her face a distorted appearance.

Over these years it did not occur to the patient that there might be a relationship between this condition and her binging and vomiting, behaviors she had been doing to some extent for eight years. During these four years many examinations and diagnostic procedures were carried out in a number of medical facilities in an effort to reach a diagnosis upon which appropriate treatment could be instituted. Suspected diagnoses corresponded to the various medical conditions known to produce parotid enlargement such as obstruction of the ducts, local infection, viral diseases, allergic and autoallergic reactions, Sjögren's syndrome, Mikulicz's disease, uveoparotid fever, and so on.[4] Thus she had examinations of the oral cavity and oral pharynx, dental examinations, and laryngoscopy, the results of which were always negative. Roentgenograms of the chest, paranasal sinuses, and teeth were negative. Also negative were gastric washings, pancreatic enzyme studies, several sialograms, a variety of endocrinological studies, antinuclear antibody tests, and countless blood chemistries. Needle biopsy results of the parotids were normal without evidence of acute or chronic inflammation.

Over this four-year period, a variety of treatments were tried on an empirical basis, including antihistamine medications, phenylbutazone, neostigmine injections, and trials of steroids and antibiotics. A trial was also made with autologous vaccines prepared from her own saliva. As none of these brought relief, and the patient was becoming increasingly distressed and despondent over her refractory condition, a trial of radiation therapy was recommended and undertaken. The patient was now 27 years old.

Radiation therapy consisted of 15 MeV delivered via a Betatron in the area of the left parotid in four fractions over a three-day period for a total dose of 720 rad. There was a rapid regression of the swelling from an approximately 7 × 7 cm mass to a barely detectable enlargement at the angle of the jaw. Similar radiation was applied to the right parotid area, which responded in a similar fashion. Over the next ten months, however, the swelling and associated discomfort gradually returned. The patient was still secretly binging and vomiting. A second course of radiation was undertaken, 200 rad being delivered to each side by means of a 10-MeV electron beam. Again in a matter of days there was a favorable response. The swelling again returned over the next six months. A third and final course of radiotherapy was applied to both sides, 1,500 rad being delivered over seven fractions on this occasion. Virtually all the swelling disappeared following this treatment.

The patient continued to binge and vomit over

Continued on page 500

Continued from page 497

the following six years, although with somewhat less frequency than previously. Only minimal, painless swelling of the parotids occurred. During this period she was married and bore two normal children. As the eating disorder was a continuing source of anxiety and guilt to her, she finally confided in her husband about the problem and sought psychiatric help. It was at this time that she learned of the likely relationship between her eating habits and the parotid swelling. Currently she is being treated for her psychiatric disorder.

Comment

At the Eating Disorder Service enlargement of the parotids occurs in about 10 percent of the patients with bulimia, occurring more often in those who binge and vomit one or more times every day. About 50 percent of these show elevated serum amylase levels, a proportion in keeping with the report of Levin et al.[5] We have detected no amylase elevations in those without parotid swelling.

The mechanism of parotid swelling in patients with bulimia is not clear. Intense repeated stimulation of the salivary glands from repeated episodes of binge eating (work hypertrophy) would seem to be the most likely cause. Indeed, persistent parotid swelling has been observed in several women who ingested large amounts of starch on a daily basis.[6] However, parotid swelling also has been described in cases of repeated, surreptitious self-induced vomiting.[7] Russell[8] described a woman with bulimia whose chronic salivary gland swelling subsided when she could bring vomiting under control. Possibly the mechanism here involves the irritating effects of the vomitus on the opening and lining of the salivary ducts. Although most Eating Disorder Service patients with parotid swelling both binge and vomit, patients with swelling are seen who self-induce vomiting without binging as well as occasional patients who binge without vomiting. Thus both behaviors probably play a role.

Bulimia was without doubt the cause of the bilateral parotid enlargement in the patient described above. Its onset corresponded to an increment in the frequency of her binging and

Continued on page 502

Continued from page 500

vomiting at the age of 23 years. It persisted for the years during which she was bulimic until treated symptomatically with radiation. Her salivary glands seem less responsive to binging and vomiting since her third and most intense course of radiation. Since learning of the likely relationship between her eating habits and the parotid enlargement, however, she has become aware that swelling tends to occur three to six days after a severe bulimic episode.

Persistent, bilateral enlargement of the parotid glands in a young woman without apparent cause should suggest bulimia to the physician, especially if other signs and symptoms of the bulimic disorder are present, such as erosion of the dental enamel, hypokalemia, major adjustment problems, or depression. Because of the secretive nature of the disorder and the guarded manner of these patients, eliciting a history of the binge-vomiting behavior is not always easy. The patient's trust and confidence must be won and the matter of her eating habits approached with tact and understanding. Once the diagnosis is made, a program of treatment that often includes behavioral, cognitive, psychodynamic, and pharmacologic components is often successful in resolving the disorder.[9,10]

References

1. Casper RC, Eckert ED, Halmi KA, et al: Bulimia: Its incidence and clinical importance in patients with anorexia nervosa. Arch Gen Psychiatry 1980; 37:1030
2. Cooper PJ, Fairburn CG: Binge-eating and self-induced vomiting in the community. Br J Psychiatry 1983; 142:139-144
3. Diagnostic and Statistical Manual of Mental Disorders, ed 3. Washington, DC, American Psychiatric Association, 1980, pp 69-71
4. Watt J: Benign parotid swellings: A review. Proc Royal Soc Med 1977; 70:483-486
5. Levin PA, Falko FM, Dixon K, et al: Benign parotid enlargement in bulimia. Ann Intern Med 1980; 93:827-829
6. Silverman M, Perkins RL: Bilateral parotid enlargement and starch ingestion. Ann Intern Med 1966; 64:842-846
7. Dawson J, Jones C: Vomiting-induced hypokalamic alkalosis and parotid swelling. Practitioner 1977; 218:267-268
8. Russell GFM: Bulimia nervosa: An ominous variant of anorexia nervosa. Psychol Med 1979; 9:429-448
9. Fairburn CG: A cognitive behavioural approach to the management of bulimia. Psychol Med 1981; 11:707-711
10. Pope HG Jr, Hudson JI, Jonas JM, et al: Bulimia treated with imipramine: A placebo-controlled double-blind study. Am J Psychiatry 1983; 140:554-558