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The First-Bite Syndrome

William S. Haubrich, MD*

Patients presenting with esophageal disorders often describe what can be called a "first-bite syndrome." The condition can be discerned by its characteristic clinical features. It may be a variant of diffuse esophageal spasm. While in a majority of patients it is a benign functional disturbance, it can be a harbinger of carcinoma. When of functional origin, it is amenable, in most cases, to relatively simple medical management. (Henry Ford Hosp Med J 1986;34:275-8)

A syndrome is a concurrence, in Greek literally "a running together," of symptoms or signs that in a given patient come to indicate a particular abnormality. The more often one elicits from a series of patients a consistent set of symptoms, the more convinced one becomes that the concurrence is significant and not merely coincidence. It is such a syndrome, not generally appreciated, that I propose to set forth in this sketch.

From a number of patients presenting with esophageal complaints I was hearing the same story. These patients were telling me they would find, from time to time and without warning, that the first few bites of a meal would seem to get stuck in the gullet, often to the accompaniment of retrosternal pain. They would then say that once relieved, either by a sense of the momentarily impacted bolus passing into the stomach or by regurgitation, they could then resume eating their meal with relative ease. These patients were more annoyed than anguished, more anxious than depleted. Their story differed from that of the patient who wanly complains of invariable, persistent impairment in swallowing, signifying a fixed constriction of the esophagus, or that of the overwrought patient who complains of an unrelenting sense of "a lump in the throat," often signifying globus.

The story I was hearing was repeated with sufficient frequency and consistency to prompt a systematic analysis.

Method

What is called "clinical impression" can be illusory, if not misleading, so first I surveyed records of my consultation practice to ascertain how often I had encountered what I chose to call "the first-bite syndrome" (FBS). I reviewed my notes of the 949 consecutive outpatients and inpatients I had seen in consultation during the three years 1983 through 1985. Of these patients, 73 (7.6%) presented principally esophageal complaints, usually referable to hiatus hernia. Incidentally, I found this was the second most frequent diagnostic category in my consultation practice. It was surpassed only by the 296 patients (31.2%) who exhibited various expressions of functional gastrointestinal disorders, and it exceeded the 30 patients (3%) who presented because of uncomplicated peptic ulcer disease. These figures reflect a referral practice and are not necessarily representative of disease categories likely to be encountered in community practice.

The survey included a review of symptoms, physical findings, laboratory data, and the findings at radiography or endoscopy of the proximal alimentary tract.

The clinical criteria for identifying patients who exhibited the FBS were: 1) repeated episodes of dysphagia with retrosternal discomfort or pain, usually provoked by the first few swallows of food, but occurring unpredictably and only at occasional meals; 2) relief obtained spontaneously or after regurgitation; 3) a prompt return to comfortable swallowing; and 4) relatively symptom-free intervals between bouts of dysphagia.

A follow-up questionnaire was sent to each of the 73 patients; 54 (74%) responded. The mean interval from diagnosis to follow-up was 22 months.

Results

Some sort of impediment to swallowing was cited as a symptom by 35 (48%) of the 73 patients whose primary problem was hiatus hernia or a related condition. Of these 35, 18 described their particular dysphagia in terms conforming to the criteria identifying the FBS. The remaining 17 described other variants of impaired swallowing, such as unremitting obstruction, globus, or merely early satiety.

When the 18 patients exhibiting the FBS were compared with 55 patients otherwise disturbed by hiatus hernia or related conditions (Table), there was no significant difference in distribution according to age or sex. In both groups symptoms were usually of long duration. Patients with FBS presented somewhat earlier, probably because of greater concern for their symptoms. The two groups differed, however, in that only half the patients with FBS also complained of heartburn and acid-brash while a preponderance of patients without FBS were distressed by these symptoms.

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Table
Comparison of Patient Groups Presenting Because of Hiatus Hernia or Related Conditions with and without the "First-Bite Syndrome" (FBS)

Patients	With FBS	Without FBS
Number	18	55
Average age (years)	67.4	72.3
Sex (male/female)	7/11	22/33
Duration of symptoms (years)	8.6	13.4
Associated symptoms (yes/no)		
Heartburn	9/9	40/15
Acid-brash	8/10	33/22
Dysphagia	18/0	17/38

Physical examination in both groups was unrevealing. Neither gave evidence of nutritional deprivation or weight loss.

Barium meal fluoroscopy and radiography or fiberoptic endoscopy were performed in all cases. Sliding hiatus hernia, as defined by the esophagogastric junction being situated above the diaphragmatic hiatus, was observed in all but one of the patients with FBS. The sole exception did exhibit tertiary contractions in the distal esophagus. Three of the patients with FBS were shown to have a lower esophageal ring structure (Schatzki "B" ring) but in each the diameter of the ring was 1 cm or larger.

In none of the patients was there obstruction to the flow of liquid barium through the esophagus or impediment to passage of the endoscope through the esophagogastric junction. Endoscopically visible inflammatory reaction was evident in only a few patients and, when seen, esophagitis was relatively mild.

One noteworthy observation was that three of the 18 patients presenting with FBS were found with carcinoma at or near the esophagogastric junction. In two patients the carcinoma was discovered at the time of presentation and promptly treated. In the third patient a carcinoma, not evident when the patient was first seen and when he had complained of intermittent dysphagia for two years, was discovered only after another interval of two years. Whether this tumor was present but occult when the patient's FBS was identified is a matter of speculation.

Treatment for all patients, except for the two in whom carcinoma was discovered at the time of assessment, consisted principally of an explanation of the syndrome, reassurance, and instruction in cautious eating. For those patients whose symptoms included heartburn or acid-brash, nonabsorbable antacids or H-2 receptor antagonists (cimetidine or ranitidine) were prescribed. Dilatation was not employed nor was surgical operation invoked.

At follow-up, none of the respondents was wholly symptom-free, but six patients reported less frequent dysphagia, two reported no change, and two claimed more troublesome symptoms.

Comment

Much has been written about dysphagia or difficult swallowing, a symptom that always should quicken a clinician's attention. But in reviewing the standard texts and treatises that deal

with esophageal disorders, I was unable to find a clear enunciation, other than perhaps a fleeting mention, of the particular sort of dysphagia and retrosternal discomfort that my patients were telling me about. I did find a similar, though not identical, description in a paper, later published (1), that Hamilton Osgood had read before the Boston Society for Medical Improvement in 1889. Osgood undertook to describe what he called "a peculiar form of oesophagismus." Therefore, I do not claim that my description of the "first-bite syndrome"* is either original or unique. I am sure that other clinicians, since Osgood and before me, have heard patients tell of the same sequence of symptoms and have attributed the syndrome to broader categories of esophageal disturbance.

That recurring dysphagia and retrosternal pain can be associated with disturbed esophageal motility, in the absence of any organic lesion, has been long recognized. The best known and broadest of these categories is diffuse esophageal spasm (2,3). This is a nonpropulsive hypertonicity in the circular spirals of smooth muscle at the distal esophagus. At fluoroscopy, with a barium swallow, the configuration is described as "curling" or "corkscrew esophagus" (4). Because it is more often observed in elderly patients, it has been referred to as "presbyesophagus." In many, if not most, patients the condition is asymptomatic. In others it can be associated with bouts of retrosternal pain, not necessarily related to swallowing. It can be marked by transient dysphagia. Esophageal manometry may record repetitive, nonperistaltic, simultaneous contractions, often of high amplitude, in the distal esophagus. A subset of this category is made up of patients presenting similar symptoms but in whom manometry, with swallowing, shows high amplitude, peristaltic contractions (5). This has been called "nutcracker esophagus."

My supposition is that the condition expressed as FBS probably is a variant of diffuse esophageal spasm. One can postulate that the symptoms of FBS begin with a failure of the lower esophageal sphincter to relax, as it normally should do to allow passage of the swallowed bolus. The bolus, thus impeded, stimulates stronger contractions of the smooth muscle at the distal esophagus in an effort to force the passage. Whether these forceful contractions are simultaneous (ie, nonperistaltic) or peristaltic or both is yet unknown. Insofar as patients find that by waiting in a composed manner the bolus usually passes spontaneously, one might assume that contractions can be peristaltic. On the occasions when the bolus will not pass but must be regurgitated, one might assume that the contractions were only painful and not purposeful. In either case, because a key feature of FBS is that once relieved the patient can resume eating comfortably and because the extended intervals between attacks are symptom-free, one must conclude the esophagus is essentially capable of normal function, viz, orderly peristaltic contractions and responsive relaxation of the lower esophageal sphincter, at least most of the time.

In this era of objective verification and quantification, one would like to have a neat array of measured data to back up any

*My friend Dr Alan Hofmann objects that the term should be "first-swallow syndrome," and perhaps he is right. But to me "first-bite syndrome" seems more euphonious.

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supposition. Because of the typically unpredictable occurrence of FBS, it is almost impossible to reproduce the sequence of events under measurable conditions that would simulate the natural event.

Symptomatology

Further remarks pertaining to the symptoms typical of FBS are in order. Dysphagia and retrosternal distress occur abruptly and unexpectedly with the first few bites of food. The patient has no premonition of disturbance when he sits down for a meal. Most patients claim the evening dinner meal as the occasion of greatest risk, probably because this is customarily the repast of heavier content. Symptoms are less often encountered at lunch and rarely at breakfast. Interestingly, most patients say they are more often afflicted when dining in restaurants or other public places than when partaking of meals in their own homes. This may correlate with the observation that symptoms sometimes seem provoked by circumstances of stress or tension. The type of food consumed at the beginning of a meal is thought by some patients to increase the risk of an attack. Tough red meats and glutinous breads are common offenders, but reactions are inconsistent. Soups are rarely indicted. Foods swallowed at extremes of temperature, hot or cold, seem to make little difference. Some patients confess to eating hurriedly or failing to chew food thoroughly and find these conditions can be a prelude to distress.

The first attack often is described as the most alarming. Sudden retrosternal pain or sense of choking understandably prompt an imagery of "heart attack" and impending doom. Later attacks, by then known to be transient, are less likely to induce panic. The apparent plight of the victim can be unnerving to observers. One woman, having experienced several attacks in restaurants, asked how she could protect herself from assaults by well-meaning bystanders overly eager to perform the Heimlich maneuver.

Patients learn to facilitate relief by several means. Often they try to sip fluids in the hope of flushing down the impacted bolus. Sometimes they feel obliged to leave the table and seek the haven of a washroom where they may try to induce regurgitation. Most often, patients find by maintaining composure they are soon rewarded by relief. All patients say they can tell when the esophagus relaxes and can sense the easing of the bolus into the stomach. At this signal, or after regurgitation of the offending bolus, patients learn they can then resume eating in relative comfort.

Investigation

While the clinical features are sufficiently characteristic to permit a designation of FBS, one must remember that FBS is only a syndrome and not a diagnosis. Also, one should be mindful that, while for a majority of patients the syndrome usually reflects a benign, functional disturbance, it can be a harbinger of carcinoma, as it appeared to be in three of the 18 cases cited in this report. Therefore, pertinent objective investigation of each case is mandatory.

A carefully observed and recorded barium meal examination may suffice. By this means a fixed stricture or other deformity

can be ruled out. In most cases of FBS the radiologist will report the examination as "normal" or, if remarkable at all, as merely showing a small sliding hiatus hernia, perhaps demarcated by a patent lower esophageal B-ring. In some cases tertiary contractions in the distal esophagus will have been noted. In none of our cases has there yet been observed any impediment to the free passage of liquid barium into the stomach. It is possible we may be able to contrive a radiopaque bolus that might provoke an observable disturbance of motility in these patients. We have not yet accomplished this, but we will keep trying.

Probably the diagnostic tool of choice is the endoscope. While endoscopy is an unreliable indicator of esophageal motor function, either normal or abnormal, endoscopy can detect a fixed stricture and, more importantly, provide a means for biopsy or brushing cytology, thus helping to determine its cause. If carcinoma is lurking near the esophagogastric junction, one must look carefully, for it may be small and situated in the cardiac portion of the stomach just beyond the squamocolumnar junction. Endoscopy also can permit identification of a sliding hiatus hernia and can disclose any significant mucosal reaction to gastroesophageal reflux.

All of the patients in this report were not subjected to esophageal manometry. The reason is that manometry can be expected to reveal little, if any, information not obtained by scrutiny at fluoroscopy. Moreover, manometry cannot detect neoplasia or yield evidence of mucosal reaction to reflux. Measurable abnormality in function of the lower esophageal sphincter has been observed under test conditions in only a minority of patients with diffuse esophageal spasm (6) and then inconsistently (7). We have not yet, in these patients, experimented with provocative manometry which sometimes can confirm a diagnosis of diffuse esophageal spasm (8).

Other so-called esophageal tests, such as the Bernstein acid infusion or pH monitoring of the distal esophagus, are not pertinent to the FBS.

Differential diagnosis

Fixed *stricture* causing an unyielding obstruction of the lumen near the esophagogastric junction is likely to produce unremitting and predictable dysphagia. The patient encounters difficulty in swallowing, albeit of varying degree, with almost every meal. *Achalasia* of the esophagus in its early manifestation may be more difficult to discern from FBS, especially when achalasia is attended by esophageal spasm (the so-called "vigorous achalasia"). However, achalasia, soon or late, leads to unremitting dysphagia, and the condition is readily evident at barium meal examination. *Carcinoma* at or near the esophagogastric junction, as previously noted, must be ruled out in the patient presenting with FBS. A symptom complex simulating FBS is an exceptional presentation by patients with carcinoma; usually they describe progressive dysphagia and weight loss. I have suggested that FBS might be subsumed in the broader category of *diffuse esophageal spasm*. Patients so afflicted may complain of retrosternal distress identical to that described by patients with FBS. A difference is that painful attacks of diffuse esophageal spasm can occur at any time of day

or night and are not necessarily related to eating; FBS by definition occurs only with meals. None of the 18 patients cited here complained of retrosternal distress *not* associated with eating. The FBS bears no relation to the rare *ruminant syndrome* recently described by Amarnath et al (9).

Management

Once FBS has been confirmed as a functional disorder and associated carcinoma has been excluded, therapy is relatively simple. If symptoms or signs of actual esophagitis attend the FBS, then treatment of gastroesophageal reflux by customary means is advised. However, in the absence of gastroesophageal reflux, which is often the case, there would seem little indication to impose intensive or protracted courses of antacids, H-2 receptor antagonists, metoclopramide, or other drugs. The fact that episodes of FBS are typically infrequent, isolated, and unpredictable would, in my view, vitiate any long-term, ritualistic medication. Hydralazine (Apresoline) has been said to allay pain and dysphagia in patients with symptomatic diffuse esophageal spasm (10), and diltiazem (Cardizem), a calcium-blocker, has been reported to ease distress produced by the "nutcracker esophagus" (11). I have yet to find a need for these agents in patients with FBS. Sublingual nitroglycerine has been used, but most patients say the questionable relief thus obtained is hardly worth the throbbing headache induced by organic nitrates.

Rather, reliance usually can be placed on explanation and counseling. I have found that patients who have experienced FBS are much reassured by a reasonable explanation of the mechanism of their symptoms. Reassurance that they have been found free of any dire, threatening, or debilitating disease goes far in allaying their anxiety.

Patients are advised to be especially careful in selecting and chewing the first few bites of a meal. A few sips of soup, if that is provided before the entree, can be helpful in gently arousing the esophagus to its proper function. I warn against beginning a meal with a bolted swallow of bulky, poorly chewed meat or a gummy wad of soft bread. Patients are cautioned to avoid partaking of a meal under conditions of stress or tension, but I know this advice is easier to give than to follow.

If, despite precautionary measures, the typical symptoms of FBS supervene, then, above all, the patient should strive to re-

main calm and resist panic. Most patients have found from their own experience that if they sit back and simply and quietly wait for a few minutes, the symptoms will subside. After a decent interval they find they can resume eating, and there is no reason why they should not do so.

For the patient who claims almost every venture to eat in a public place is fraught with anxiety, I may suggest the patient take a capsule of Librax or its generic equivalent a half hour before the meal is expected to be served. I have no evidence that this is effective, but a few patients seem to think so.

I tell the patient that we cannot expect any regimen to wholly and lastingly assure an absence of symptoms. Most patients seem willing to accept such a disclaimer. After initial assessment, the patient is asked to return for later follow-up evaluation and meanwhile to promptly report any new or different symptoms that might supervene.

The result of such a simple regimen usually is satisfactory to the patient and to the physician alike.

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