

Heartburn and globus in apparently healthy people

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Most clinicians would agree that heartburn is associated with the reflux of gastric or duodenal contents into a dysfunctioning lower esophagus. In the absence of demonstrable hiatus hernia or esophagitis^{1,2} it may be considered a functional disorder. Globus has also been characterized as reflecting a functional disorder of the esophagus.³ This feeling of having a "lump in the throat", when unrelated to dyspepsia, is believed to be due to dysfunction of the upper esophageal sphincter.^{4,5} It is also said to be a physical manifestation of suppressed emotion — specifically, holding back tears.⁶ Although much money and effort are spent in managing the symptoms of these two disorders of the esophagus, there is little in the literature on their incidence, or on their relation to each other or to other functional gastrointestinal disorders. We decided to address these questions as part of a study of bowel symptoms in 301 subjects, the results of which have already been published.⁷

Subjects and methods

Apparently healthy British individuals of varied background were asked to volunteer for an interview. Of 327 people approached, 12 could not participate: 7 did not fit the criteria because they had an organic gastrointestinal disease, and 5 were unable to arrange time for an interview. Another 14 refused to participate, so that we had 301 subjects, in three age groups. In the young group were 55 men training

to be medical technicians at the Royal Naval Hospital in Haslar, England and 49 female nursing students at the Bristol Royal Infirmary; their ages ranged from 17 to 27 years. The middle-aged group consisted of 45 men and 9 women who were part of a randomly selected population in Bristol undergoing screening for coronary artery disease, and 43 women working as medical clerical staff at the Bristol Royal Infirmary; the age range was 45 to 65 years. In the elderly group, aged 60 to 91 years, were 63 women and 37 men housed in elderly persons' self-catering flats in Bristol. Thus, there was a total of 137 men and 164 women in the three groups, more than half of whom were not connected with the medical profession.

Each subject answered a pre-coded questionnaire about symptoms and signs they may have had in the previous year because of functional gastrointestinal disorders, including the irritable bowel syndrome. The interviews were given by one of two consultant gastroenterologists, who read each question, gave an explanation when necessary and recorded the answer. The frequency with which five key questions were answered positively was not significantly different for the two interviewers.

All the subjects were asked if they ever experienced heartburn (*burning* pain or discomfort behind the breastbone). If the answer was "Yes" they were asked standardized questions about the frequency of this symptom and its relation to meals and posture. Halfway through the study we decided to enquire about symptoms of globus as well. Thus, only 147 subjects (55 men and 92 women) — all 104 in the young group and the 43 clerical staff in the middle-aged group — were asked: "Do you ever feel as

if there is a 'lump' in your throat?" If the answer was "Yes" they were asked, in a prestructured manner, if the feeling was related to eating or to feeling emotional, and if it was relieved or worsened by swallowing.

We asked further questions only of those who reported having had heartburn at least once a week. Then, comparing the data for these subjects and those reporting globus with the data for the remainder of the subjects, we looked for associations between symptoms of heartburn or globus and the irritable bowel syndrome. A symptom was said to occur "ever" if it occurred at all, and "often" if it occurred on more than a quarter of days or occasions. The data were entered on punch cards and processed by computer. Statistical evaluation consisted of chi-square analysis. Details on the subjects and on the questionnaire are given in our earlier report.⁷

Results

Of the 301 subjects 101 (33.6%) said that they had experienced heartburn at least once in the previous year. Attacks had occurred monthly in 64 (21.3%) of the 301, weekly in 31 (10.3%) and daily in 12 (4.0%). Heartburn had occurred at least once in the previous year in 33.6% of the men and 33.5% of the women, and in 26.9% of the young, 35.0% of the middle-aged and 39.0% of the elderly (the differences between the age groups were not significant). Heartburn had occurred at least once a week in 19.0% of the elderly compared with 6.2% of the middle-aged ($P < 0.02$) and 4.8% of the young ($P < 0.01$). Heartburn occurred daily only in women; 12 were afflicted.

Heartburn occurred after meals in 74 of the 101 affected subjects,

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"often" in 67. Bending, lying or lifting initiated or aggravated the symptom in 38.

Almost 38% of the individuals who suffered heartburn weekly or more often had had abdominal pain at least six times in the previous year, compared with 18.5% of those who had occasional or no heartburn (Table I). Of six symptoms and signs associated with the spastic colon type of irritable bowel syndrome^a only abdominal distension was significantly more frequent in those with weekly heartburn; the distension was not related to meals.

Globus was reported by 67 (45.6%) of the 147 subjects who were asked about this symptom;

the proportions of men and women with globus, 34.5% and 52.5% respectively, were not significantly different. This symptom occurred in almost equal proportions of those with and without heartburn (43.5% and 46.5% respectively), even when heartburn occurring weekly was considered (in this case the proportions were 45.5% and 45.6% respectively).

Only 3.0% of the individuals with globus related it to eating; 74.6% experienced it between meals and 22.4% experienced it at both times. Fully 95.5% said that it occurred with strong emotion, and many volunteered that it disappeared with crying. Swallowing

made it better in 19.4%, worse in 8.8% and neither in 72.1%. Of six symptoms and signs of the irritable bowel syndrome, only a feeling of incomplete evacuation after defecation was more common in the subjects reporting globus (Table II).

Discussion

Heartburn and globus seem to have no consistent pathophysiologic associations. Some heartburn sufferers may have esophagitis, but not all do, and esophagitis may occur without heartburn. Until measurable and reliable indicators are identified, these symptoms can only be recognized by the sufferer's description. Thus, their prevalence in certain groups is best established by questionnaire.

In this study 1 adult in 3 experienced occasional heartburn and 1 in 10 suffered it once a week or more often. Heartburn this frequent was more likely to be experienced by women and elderly persons. Although the severity of this common condition could not be assessed, common sense indicates that vigorous diagnostic and therapeutic measures should be reserved for those in whom the symptom presents special problems, such as bleeding or dysphagia, and those in whom it is disabling. A careful history should distinguish those who have serious complications from those who do not, for who can contemplate the periodic endoscopic examination of one third of the population.

Abdominal pain seems to be more common in those who suffer weekly heartburn. Before undertaking this study we believed that heartburn was associated with functional bowel disturbances, but, of six symptoms previously found to be characteristic of the irritable bowel syndrome, only abdominal distension was significantly more frequent in the subjects who experienced heartburn at least once a week.

Among the young and middle-aged persons we assessed, globus appeared to be fairly common in both sexes. We did not question the elderly group about globus. Our

Table I—Prevalence of abdominal pain and symptoms and signs of the irritable bowel syndrome^a in subjects with frequent, occasional or no heartburn

Symptoms and signs	Prevalence (%) among subjects with heartburn		Level of significance of difference*
	At least weekly (n = 31)	Occasionally or never (n = 270)	
Abdominal pain (> 6 times/yr)	37.8	18.5	P < 0.02
Features of the irritable bowel syndrome			
Pain that is relieved by defecation	22.6	12.6	NS
Increased stool frequency when pain is present	6.5	3.7	NS
Looser stools when pain is present	9.7	4.4	NS
Mucus			
Ever	9.7	4.8	NS
Often	3.2	2.2	NS
Feeling of incomplete evacuation after defecation			
Ever	58.1	48.5	NS
Often	6.5	9.6	NS
Abdominal distension			
Ever	51.6	25.8	P < 0.02
Often	25.8	7.4	P < 0.01

*NS = not significant.

Table II—Prevalence of abdominal pain and symptoms and signs of the irritable bowel syndrome in subjects with or without globus

Symptoms and signs	Prevalence (%) among subjects		Level of significance of difference
	With globus (n = 67)	Without globus (n = 80)	
Abdominal pain (> 6 times/yr)	26.9	17.5	NS
Features of the irritable bowel syndrome			
Pain that is relieved by defecation	19.4	12.5	NS
Increased stool frequency when pain is present	7.5	5.0	NS
Looser stools when pain is present	10.5	6.3	NS
Mucus			
Ever	10.5	3.8	NS
Often	3.0	1.3	NS
Feeling of incomplete evacuation after defecation			
Ever	71.6	50.0	P < 0.02
Often	6.0	5.0	NS
Abdominal distension			
Ever	25.4	20.1	NS
Often	4.5	5.1	NS

findings confirm that it is a manifestation of emotion⁶ but do not support the idea that it is associated with reflux esophagitis.⁹ Watson and colleagues³ reported that globus was common in those with the irritable bowel syndrome, but we demonstrated no such relation.

Conclusions

Heartburn and globus are very common in apparently healthy adults. Globus, a symptom of dysfunction of the upper esophagus, seems to occur independently of

heartburn, a symptom of dysfunction of the lower esophagus, and both symptoms seem not to be associated with bowel dysfunction.

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Lack of accentuation by the Valsalva maneuver of the murmur of idiopathic hypertrophic subaortic stenosis: importance of monitoring the pulse

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In idiopathic hypertrophic subaortic stenosis the degree of obstruction of the outflow tract varies, depending in part upon the volume of the left ventricle. Decreasing ventricular volume increases the gradient across the outflow tract and should therefore exacerbate the systolic ejection murmur characteristic of the syndrome.^{1,2} Because of this, the Valsalva maneuver, which reduces left ventricular filling, is widely used in the clinical diagnosis of this entity. However, the intensity of the murmur does not consistently increase; indeed, the murmur may paradoxically soften.³

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The softening of the murmur may be explained by the conflicting changes in left ventricular function and dimensions induced by the Valsalva maneuver. As ventricular filling decreases and outflow obstruction increases, there is a corresponding reduction in the ejected stroke volume. Since the intensity of the murmur depends upon the amount of blood passing through the region of stenosis as well as upon its velocity,⁴ the fall in stroke volume tends to oppose the expected increase in the loudness of the murmur. At the same time, the reduction in stroke volume, if severe enough, should cause an attenuation of the pressure wave reaching the systemic arterial circulation.

We recently studied a patient who clearly demonstrated the importance of considering variations in the peripheral pulse when assessing the response to the Valsalva maneuver in individuals with sus-

pected hypertrophic subaortic stenosis.

Case report

A 61-year-old woman had enjoyed excellent health until she was admitted to the Bronx Municipal Hospital Center because of bleeding from the upper gastrointestinal tract and syncope. After transfusion and control of the bleeding, gastroscopy revealed a small gastric ulcer.

The patient was subsequently transferred to the Hospital of the Albert Einstein College of Medicine, Bronx, New York, for evaluation of a systolic murmur persisting after correction of the blood loss. She denied previous cardiovascular symptoms. Physical examination revealed an arterial blood pressure of 120/70 mm Hg, a brisk upstroke in the carotid pulse, a diffuse apical impulse and a systolic ejection murmur at the left sternal border that