

# Habitual rumination: a benign disorder

D F LEVINE, D L WINGATE, J M PFEFFER, P BUTCHER

## Abstract

**Nine patients who habitually ruminated after meals underwent clinical tests and psychological questioning. Barium meal radiography showed no abnormalities. In one patient oesophageal manometry detected an abnormally large gastric pressure wave 20 minutes after food. Although four patients had family psychiatric histories and three histories of overdose, anorexia nervosa, and mild reactive depression, none had any present serious psychiatric disorder. Behavioural therapy to reduce rumination was successful in one patient. Most patients responded to reassurance that the habit was harmless.**

Since the condition is a distinct clinical syndrome it may be recognised early with minimal investigations if doctors are aware of its existence.

## Introduction

Reports of rumination in humans were common until the early part of this century, but many doctors are now unfamiliar with the condition. In the past these patients were often regarded as medical curiosities and rumination was generally assumed to result from psychiatric disorder.

In 1908 Osler commented: "In this remarkable and rare condition the patients regurgitate and chew the cud like ruminants. It occurs in neurasthenic or hysterical persons, epileptics and idiots."<sup>1</sup> In the same year Brockbank, reporting a detailed series of case histories, emphasised how often the condition was familial.<sup>2</sup> Recently there have been remarkably few accounts of rumination, although in 1966 Brown, again emphasising the psychiatric aspects, reported two typical patients in whom features of hysteria were prominent.<sup>3</sup>

We investigated nine patients with the classical symptoms of rumination seen between 1979 and 1981 using radiology and oesophageal manometry and formal psychiatric assessment by interview and questionnaire.

## Patients, methods, and results

Although there were minor differences in detail, all nine patients described a similar process of rumination. From five minutes to one hour after a meal food returned repeatedly to the mouth in small quantities, which were usually chewed and swallowed again. This was always effortless and without pain or discomfort. Recognisable food was regurgitated for up to five hours after a meal and was nearly always palatable, although uncommonly an acid taste developed. The onset of an acid taste was not temporally related to the cessation of

postprandial rumination, as suggested by others.<sup>4,5</sup> Although solid food was much more commonly ruminated, the process occasionally occurred with fluid alone.

Although rumination generally occurred when the subject was at rest, it was unrelated to posture. In most patients, particularly younger ones, physical activity either lessened the rumination or allowed it to pass unnoticed. In only one patient (case 6), with the shortest history, did physical activity appear to aggravate rumination; she was the only patient who reported spontaneous remission of symptoms. In all patients with ruminating relatives the activity was regarded as virtually normal within the families.

The table gives relevant details of the patients. In all patients under 16 years halitosis was the main initial reason for seeking advice and it usually took a considerable time for rumination to be recognised.

*Clinical details of nine patients investigated for rumination*

Case No	Sex	Age (years)	Length of history	Family history	Reason for referral
1	F	56	Since childhood	Yes	Social
2	F	24	Since childhood	Yes	?Halitosis
3	M	7	"Since birth"	Yes	Halitosis
4	F	30	Since childhood	Yes	Mother of boy in case 3
5	F	47	Since childhood	Yes	Mother of patient in case 4
6	F	24	18 months	No	Anxiety
7	F	15	"Since birth"	No	Halitosis
8	F	13	"Since birth"	No (adopted)	Halitosis
9	M	15	At least 4 years	No	Halitosis

The oldest patient (case 1) sought medical advice when increased responsibility at work meant attending social functions where the habit became embarrassing.

## BARIUM STUDIES

Conventional barium meal examinations were performed in eight patients and were normal in each case. No gastro-oesophageal reflux was noted with simple tilting and, although no formal assessment was made of gastric emptying time, this was within normal limits in each case. In four patients upper gastrointestinal endoscopy showed no abnormality. As rumination did not occur with barium alone the patients in cases 1, 2, 3, and 7 were given a barium-food mixture. Only in case 1 did rumination occur under these conditions. Repeated small gastric "compressions" which appeared to coincide with diaphragmatic descent were seen. Eventually part of the gastric contents were rapidly expelled up the oesophagus which became appreciably dilated for a short time. There was no external indication that anything had occurred and after swallowing the barium and food returned to the stomach.

## OEESOPHAGEAL MANOMETRY

This was performed using a perfused multilumen tube system (Arndorfer Medical Specialties, Greendale, Wisconsin, USA) in three patients (cases 1, 2, and 6); in each case normal peristalsis at a rate of about 2 cm/s occurred after swallows of water. The lower oesophageal sphincter was assessed using both station and rapid pull through techniques. In each of the three patients a zone of raised pressure was readily apparent although the amplitudes were relatively low (16, 6, and 14 cm of water above gastric pressure). Only in the patient in case 1 did rumination occur during manometry after food. Despite recording continuously from the gastric fundus and the oesophagus after a meal the small gastric compressions which had been noted radiologically were not seen. About 20 minutes after food, however, a sudden large gastric pressure wave occurred followed almost immediately by a wave of comparable amplitude in the body

Medical Unit and Gastroenterology Unit, The London Hospital  
Medical College, London E1 1BB

D F LEVINE, MRCP, lecturer in medicine

D L WINGATE, FRCP, senior lecturer in gastroenterology

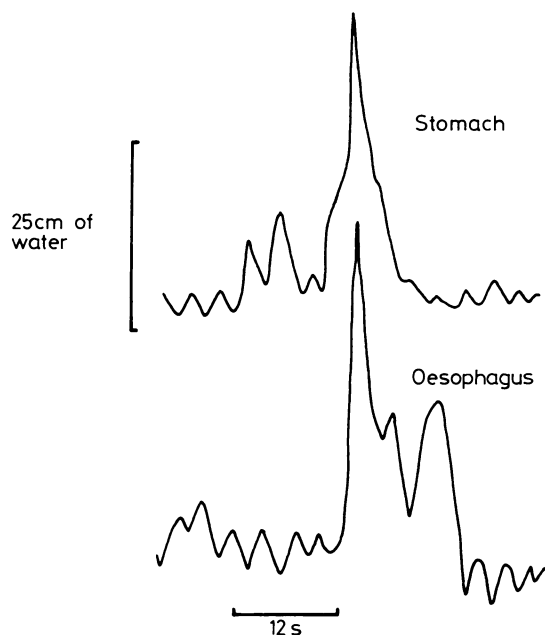
Department of Psychiatry, The London Hospital, London E1 1BB

J M PFEFFER, MRCP, MRCPsych, consultant psychiatrist

P BUTCHER, MPsych, senior clinical psychologist

Correspondence and reprint requests to: Dr D L Wingate.

of the oesophagus (figure). The whole process occurred too rapidly for more detailed observation. We specifically looked for but could not detect contractions of the anterior abdominal wall.



Results of oesophageal manometry (case 1) showing large gastric pressure wave followed by similar wave in the body of the oesophagus during rumination.

#### PSYCHIATRIC AND PSYCHOLOGICAL ASSESSMENT

Patients were interviewed by a consultant psychiatrist using the usual psychiatric history proforma and were also asked to fill in four questionnaires. Two of these were personality questionnaires, the Crown-Crisp inventory and the hostility and direction of hostility questionnaire, which are well validated as is the third, the general health questionnaire, which measures psychiatric illness. The fourth was a simple self rating analogue scale with which the patient marks the degree of social and occupational disability caused by his symptoms. The interviews indicated a positive family psychiatric history and a history of disturbed family relationships in four out of eight patients (one was adopted). Four of the five adult patients reported some psychosexual, including marital, problems. Three patients had a past psychiatric history (one an overdose, one anorexia nervosa, and the third mild reactive depression). All patients had personalities which were anxious (7/9), obsessional (5/9), or sensitive (6/9). When their mental state was examined, however, only one of the nine patients currently had psychiatric symptoms—a mild anxiety state.

The general health questionnaire was completed by five of the patients including the one with the anxiety state. None had any evidence of psychiatric illness. The Crown-Crisp questionnaire was filled in by four patients; one showed a neurotic profile but the other three were normal, although one had a high score on the questions dealing with hysteria and this was borne out in the hostility and direction of hostility questionnaire. This was also completed by four patients: two were in the normal range, one was anxious, and one hysterical. The final questionnaire dealing with impairment of quality of life showed that four out of six patients rated the symptoms as having no effect on their lives. One said it interfered mildly with his work and the other moderately with her social life. There were two reasons why the questionnaires were completed by only half the patients. Apart from the self rating questionnaire the other three were considered inappropriate by three patients because of their age, while three belonging to one family refused to fill in any questionnaires as the interview had brought back enough bad memories.

After the initial assessment the patients were referred to a clinical psychologist for behavioural evaluation and treatment.<sup>6</sup> Each patient was asked to keep a daily record of rumination together with details of food eaten, surroundings, company, and feelings during the meal. There was no overall correlation between rumination and any of these factors but in one patient mood was clearly important with rumination occurring during phases of negative feelings. Treatment

was directed initially at training patients to relax after meals and later before meals. Taped instructions were used. Compliance with this treatment was poor and only one patient reported a definite reduction in rumination.

#### Discussion

The problem of diagnosing rumination lies not in identifying the characteristic history but in the lack of awareness of the syndrome. In this series one patient (case 2) was not correctly diagnosed until, three years after presenting initially, she was again referred by her practitioner within days of another patient (case 1) with an almost identical history being seen by the same doctor.

The mechanism of rumination remains obscure. Whether the stomach is compressed by the abdominal wall, the diaphragm, or intrinsic contraction there clearly has to be coordinated relaxation of lower and upper oesophageal sphincters. Although the process would be facilitated by lower oesophageal sphincter pressures of small amplitude, as in our patients, there was no evidence that these were incompetent under other conditions. These patients may repeatedly but unconsciously raise their intra-abdominal pressure after a meal (W J Dodds, personal communication); these episodes correspond to the gastric compressions we observed. Regurgitation occurs when one of these compressions coincides with swallowing and the associated relaxation of the lower oesophageal sphincter. There has been no evidence of the reverse oesophageal peristalsis which occurs in animal ruminants in either our patients or the few others studied.<sup>7</sup> On present evidence the most plausible explanation for rumination is that it is a learned habit, in some cases from a parent. Alternatively, in patients who have ruminated since early childhood the habit of infantile regurgitation may have persisted, perhaps with parental approval. Rumination probably occurs more commonly than thought at present and only a few patients seek medical advice.

Clearly it caused little interference with the everyday life of our patients and this may explain the common failure to come with treatment. Although there was no evidence to suggest that these patients as a group were currently psychiatrically ill, further investigation of a larger number of patients would be needed to clarify any psychiatric component of this disorder. In younger patients some form of distraction might be a more appropriate form of treatment but motivation for any one consuming treatment is lacking.

Rumination is a benign process and can be diagnosed with confidence from a careful history. Investigations are unlikely to indicate upper gastrointestinal abnormalities unless other symptoms or signs are present. Most patients appear to be relieved when their problem is recognised and they are reassured that it is harmless.

Part of this paper was presented to the British Society of Gastroenterology, September 1981.

#### References

- 1 Osler W. *The principles and practice of medicine*. 6th ed. London: Apperly and Co, 1908.
- 2 Brockbank EM. Merycism or rumination in man. *Br Med J* 1907;i: 421-7.
- 3 Brown WR. Rumination in the adult. A study of two cases. *Gastroenterology* 1968;54:933-9.
- 4 Shearman DJC, Finlayson NDC. *Diseases of the gastrointestinal tract and liver*. London, Edinburgh: Churchill Livingstone, 1982.
- 5 Pope CE. Symptomatology. In: Sleisenger M, Fordtran J, eds. *Gastrointestinal diseases*. Philadelphia: WB Saunders, 1973.
- 6 Whitehead WE, Schuster MM. Behavioural approaches to the treatment of gastrointestinal motility disorders. *Med Clin North Am* 1981;65: 1397-81.
- 7 Winship DH, Zboralske F, Weber WN, Soergel KH. Oesophagus in rumination. *Am J Physiol* 1964;207:1189-94.

(Accepted 28 April 1983)