secondary to distortion of the optic chiasma, hypothalamus, or infundibulum with blockage of the blood supply in the stalk and differentiated this from postpartum and other causes of pituitary necrosis. Retention of some aspects of pituitary function by our patient makes this mechanism unlikely unless ACTH and gonadotrophin production is much more susceptible to ischaemia than production of other pituitary hormones. There is no evidence to suggest that our patient experienced the severely shocked state described by Sheehan or a Schwartzman reaction.[5] Pituitary dysfunction in "normal pressure" hydrocephalus seems to result from damage to the hypothalamus rather than to the pituitary gland or its stalk, presumably as a direct effect of the intermittent bursts of intracranial hypertension.

In conclusion, this patient not only sheds light on the mechanism of development of pituitary failure but also draws attention to the possibility that pituitary insufficiency may be present in patients with so-called "normal pressure" hydrocephalus. Although studies are in hand to assess the frequency of this association, the clinical importance of pituitary failure in patients with similar hydrocephalus prompted us to report this case.

We thank Professor Brodie Hughes and Dr D London for permission to report this case and their advice; the departments of clinical biochemistry and of clinical endocrinology at the Queen Elizabeth and Women's Hospitals, Birmingham, who performed the assays; and Hoechst Pharmaceuticals Ltd, who kindly provided the gonadotrophin-releasing hormone.

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The postcoital test: What is normal?

The test that many infertile couples find distasteful is the postcoital test, and, although it has been used for over 100 years, there is no agreement on what is a normal and satisfactory result. The test was first used in 1866 by J Marion Sims,[1] and in 1913 Huhner[2] published a series of articles describing it as his "cervix test." In 1959 Grant[3] reviewed several descriptions of test results and commented that, with values varying from a few to 100 sperms per high power field, there was no consensus of opinion as to to what constituted a satisfactory result. As all these reports were based on subfertile patients, he pointed out the need for normal volunteers as controls, but stated that he had been unable to persuade fertile couples to participate in the test. We have performed the test on 50 fertile couples and report our findings to establish a range of normal values.

Patients, methods, and results

The study group consisted of 50 patients, all of whom had proved their fertility with their husbands, had had no difficulty in conceiving their children, and had regular menstrual cycles. They had all recently been laparoscopically sterilised; thus their cervical mucus showed physiological cyclical changes. All the tests were performed during the ovulatory phase of the cycle. Patients were instructed that intercourse should take place late the night before the test, that they should remain supine for a minimum of half an hour after intercourse, and that they should refrain from douching or bathing.

The cervix was visualised with a Cusco's speculum and a tapered glass pipette was introduced into the cervical canal. A sample of endocervical mucus was aspirated, added to a drop of normal saline on a microscope slide, and immediately examined. The quantity of mucus, its quality, the number of sperms per high power field, the percentage of motile sperms, and the coitus test interval were recorded. If no spermatozoa could be seen on the initial preparation the specimen was fixed and stained with haematoxylin and eosin for easier identification of any sperms present.

The results of the 50 tests are summarised in the table. Only four specimens showed no sperms on unstained preparation and only one showed total absence of spermatozoa after staining. Forty specimens showed at least one sperm per high power field and were suitable for evaluation of percentage motility. Thirty-two of these showed sperms with motility of 50% or more. Only six specimens showed all sperms present to be non-motile. In 43 of the specimens the mucus was clear, in five cloudy, and in two blood-stained. The two blood-stained specimens showed "zero" and "occasional sperms only." The cloudy specimens showed sperm counts ranging from 0-78 with varying motility.

Results of postcoital tests

No of spermatozoa per high power field	No of patients	Percentage of spermatozoa motile	No of patients
0	1		
Some spermatozoa seen after H and E staining only	3	0	6
Less than 1	6	1–24	0
1–5	6	25–49	2
6–10	5	50–74	4
11–20	8	75–100	28
21–50	10		
51–100	8		
Greater than 100	3		

Discussion

Although it is commonly accepted that a normal result of the postcoital test should have 10 motile sperms per high power field,[4] this has never been substantiated. This trial was designed so that a normal range for the test could be established. In our series of 50 tests on normal couples almost half had a result that would be considered unsatisfactory. Therefore we conclude that any postcoital analysis which shows any motile spermatozoa should be considered as indicating a normal result and there is no importance in the number of sperms per high power field. We would also recommend that where no sperms are seen on direct examination any specimen should be fixed and stained with haematoxylin and eosin. If sperms are detected the test confirms the couple's technique and anatomical normality. Twenty per cent of the specimens in our series had sperms with motility of under half including six samples where all the sperms were non-motile. As all these patients had had no difficulty in conceiving, the importance of finding necrospermia is debatable. Finally, the quality and quantity of mucus did not correlate with sperm counts or motility.

We thank Mr B G Pickles and Mr J G Hill, consultant gynaecologists, for their help with the project, and Mrs B M Cook for her secretarial help.

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Inhibition of intrinsic factor secretion by cimetidine

Cimetidine was released for general prescription by the Committee on Safety of Medicines in Britain in November 1976 for the treatment of patients with peptic ulceration. The exact role of this new drug in treating this type of condition has yet to be determined. Although a very thorough search has been made for toxic side effects,[1] most studies have been conducted over a relatively short period when compared with the likely duration of treatment.

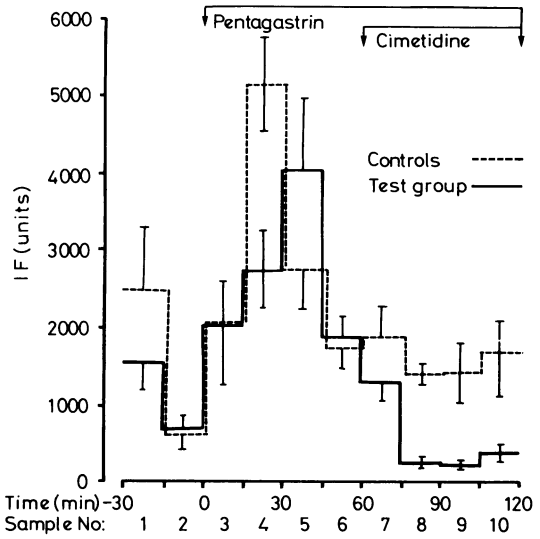
The effect of the histamine H_2 antagonists on intrinsic factor (IF) secretion and hence their possible effect on vitamin B_{12} absorption

have received little attention (although both IF and hydrogen ion are produced by the parietal cell), and we report here our findings in patients with duodenal ulcer.

Patients, methods, and results

Forty-four patients (34 men and 10 women) with endoscopically proved duodenal ulceration were investigated using standard gastric acid secretion study techniques. Gastric juice was collected in 15-minute aliquots and IF concentration was estimated by radioimmunoassay.[2] Two series of studies were carried out, one on basal gastric secretion (details can be supplied on request) and one on pentagastrin-stimulated secretion. For the pentagastrin study a control test was performed in 13 patients: 30-minute basal secretion was followed by pentagastrin infusion (6 μg/kg/h) for 120 minutes. A further 16 patients (test group) underwent the same procedure but cimetidine (2 mg/kg/h) was added from a separate syringe during the second hour of pentagastrin infusion.

In controls the characteristic pattern of IF output stimulated by pentagastrin infusion is shown in the figure.[3 4] A steady state of IF secretion was achieved 60 minutes after the start of the infusion, there being no statistical difference between the IF output in sample 6 and subsequent collections. The pattern of IF secretion in the cimetidine-treated group was different: both IF and acid secretion at the end of the cimetidine infusion were about a quarter of the pre-cimetidine levels. The smaller IF and acid outputs were contributed to by a lower volume of secretion and a reduced concentration of both substances. Mean IF outputs ($\pm$SE of mean) in samples 6, 9, and 10 were 1871 ± 270, 262 ± 75, and 411 ± 98 U/15 min respectively (6 *v* 9 and 6 *v* 10: $P<0{\cdot}01$, Wilcoxon test); mean IF concentrations were $20{\cdot}5\pm2{\cdot}3$, $8{\cdot}2\pm2{\cdot}1$, and $11{\cdot}5\pm1{\cdot}6$ U/ml ($P<0{\cdot}01$). The corresponding values for acid output were $10{\cdot}3\pm1{\cdot}5$, $2{\cdot}3\pm0{\cdot}5$, and $2{\cdot}3\pm0{\cdot}6$ mol/l ($P<0{\cdot}01$); for acid concentration $106{\cdot}3\pm32{\cdot}7$, $62{\cdot}8\pm31{\cdot}1$, and $62{\cdot}0\pm31{\cdot}4$ mol/l ($P<0{\cdot}01$); and for volume of secretion $91{\cdot}5\pm11{\cdot}9$, $35{\cdot}0\pm7{\cdot}8$, and $35{\cdot}9\pm7{\cdot}4$ ml ($P<0{\cdot}01$). (Similar results were obtained under basal conditions.)



Effect of cimetidine on pentagastrin-stimulated IF output. Results are means $\pm$ SE of mean.

Discussion

This study shows that cimetidine reduces IF output under basal and pentagastrin-stimulated conditions in patients with duodenal ulcer. Of special interest was the reduction in IF concentration in both parts of the study, which indicates that cimetidine has an action on IF over and above that of reducing the volume of gastric secretion. Burland *et al*[5] studied the effect of cimetidine on IF release in eight normal volunteers and claimed that there was no significant reduction in IF secretion. They used a lower dose of cimetidine, however, which produced a smaller reduction in mean acid output than we achieved. The most important difference between the studies was the timing of cimetidine infusion. Burland *et al* investigated the effect of cimetidine during the early period of pentagastrin infusion, when preformed IF is rapidly released into gastric juice. We tested the effect of cimetidine after this initial rapid release phase had ended—during the period of IF synthesis.

IF secretion in patients with duodenal ulcers is therefore greatly reduced by cimetidine infusion, but this is unlikely to interfere with vitamin B_{12} absorption in most patients. Nevertheless, the effect of long-term cimetidine administration on IF secretion and vitamin B_{12} absorption needs to be measured to confirm the safety of this new drug during prolonged treatment.

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Oesophageal bolus extraction by balloon catheter

Here I describe a simple technique of relieving sudden onset complete obstruction of the oesophagus by a bolus, which has been used in two patients.

Method and case reports

A well-lubricated 26 F Simplastic Foley catheter is passed through the mouth with the patient sitting upright. No sedation or surface anaesthesia is used. In the stomach the balloon is inflated with 8 ml of air, this allowing it to pass up through the cardia. On withdrawing the catheter the bolus is removed, resulting in immediate relief of symptoms.

Case 1—A 70-year-old woman presented with a three-hour history of total dysphagia. She gave no other history and the results of physical examination were normal. Bolus obstruction was diagnosed, but conventional methods (including fizzy drinks and passing a soft rubber tube) failed to dislodge it. The method described above was used, a large meat bolus produced, and she could then swallow normally again. Findings on subsequent oesophagogastroduodenoscopy were normal.

Case 2—A 74-year-old man presented with a four-day history of total dysphagia. He had a history of productive cough and smoked one and a half ounces of tobacco weekly. Examination showed finger clubbing but no other abnormality, while a chest *x*-ray film showed a left hilar mass. A diagnosis of oesophageal bolus obstruction secondary to extrinsic compression from a bronchial carcinoma was made. After passing a 26 F Foley catheter, food debris was recovered, and the procedure was repeated four times until no more was obtained. The patient was immediately able to swallow sloppy foods. At subsequent oesophagogastroduodenoscopy a resistance to the endoscope was found at 36 cm. Fibreoptic bronchoscopy confirmed the presence of a tumour of the left main bronchus, biopsy specimens of which showed a well-differentiated squamous cell carcinoma. He remained symptom-free for three months.

Comment

Balloon catheter extraction of boluses that are obstructing the oesophagus has not been reported. Investigating patients with "spasm at the entrance of the oesophagus," Brown Kelly passed a metal urethral catheter with a finger stall tied to its end.[1] He then inflated this and withdrew the catheter, concluding that no organised adhesions were present in this condition. In addition, he found that the manoeuvre produced improvement in symptoms. Hydrostatic[2] and pneumatic[3] dilatation of the lower oesophagus has been used in the treatment of achalasia, and more recently disruption of postcricoid oesophageal webs using a Foley catheter has been recorded.[4] In the presence of a bolus obstruction, surface anaesthesia was deliberately omitted to