Lesson of the Week

Haemorrhage from gastric artery aneurysms

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Using the fiberoptic endoscope has improved the diagnosis of upper gastrointestinal bleeding. Cotton *et al*¹ have shown that in nearly 80% of cases the cause of the bleeding can be shown if endoscopy is done within the first 48 hours. In a few patients, however, neither conventional radiological studies nor endoscopy shows the site of bleeding.¹⁻³ Submucosal vascular malformations of the stomach may produce massive upper gastrointestinal haemorrhage,^{4,5} and such lesions may be impossible to diagnose unless coeliac axis angiography is performed.⁶ We report on three patients who had aneurysms of the left gastric artery in whom life-threatening haemorrhage was successfully controlled with Gelfoam embolisation.

Case reports

Case 1—A 46-year-old Jamaican woman was admitted with haematemesis and melaena. She was shocked, with a pulse rate of 120/min and a systolic blood pressure of 90 mm Hg. She received four units of blood because her haemoglobin concentration was 8.8 g/dl, and her condition remained stable during the following 12 hours but then deteriorated after further melaena. Endoscopy showed a nodular lesion with an adherent clot about 7 mm in diameter on the posterior wall of the stomach 5 cm below the cardia. Biopsy of this lesion caused a profuse haemorrhage. Coeliac axis angiography performed under a local anaesthetic by the percutaneous right femoral artery showed a leaking aneurysm of the left gastric artery (fig 1), which was successfully embolised by injection of 1.5 ml Gelfoam. Histology of the biopsy specimen confirmed that this was a fragment of artery. Two years later the patient is still being followed up, and she has had no further bleeding.

Case 2—A 66-year-old woman presented to hospital after a large haematemesis. She had a five-year history of rheumatoid arthritis treated with indomethacin and enteric-coated prednisolone. On examination she was anaemic (Hb 7.6 g/dl) and hypotensive (systolic blood pressure 80 mm Hg). After resuscitation with six units of blood endoscopy was attempted but quickly abandoned because of repeated bleeding. Coeliac axis angiography showed a bleeding aneurysm of the left gastric artery (fig 2), and this was embolised with Gelfoam. Endoscopic examination 48 hours after embolisation showed a small necrotic area close to the cardia, but no further bleeding occurred. She was discharged home three weeks after admission to hospital.

Case 3—After taking an overdose of 30 g of paracetamol a 40-year-old woman was admitted with a large haematemesis.

Angiography may detect the source of upper gastrointestinal bleeding when endoscopy fails

Because she had vomited profusely at home a confident diagnosis of Mallory-Weiss oesophageal tear was made, but no such lesion was seen when emergency endoscopy was performed.

FIG 1—Coeliac axis angiography after endoscopic biopsy of an aneurysm in the left gastric artery. Extravasation of contrast indicates profuse bleeding (arrow).

FIG 2—Leaking aneurysm from a branch of the left gastric artery (arrow).

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Three small submucosal protuberances just below the gastro-oesophageal junction were the source of bleeding. Biopsy specimens were not taken. Because we were not sure what these lesions were coeliac axis angiography was performed which showed three small aneurysms of branches of the left gastric artery (fig 3). Embolisation was not done because her

FIG 3—Selective catheterisation of the left gastric artery showing three small aneurysms of distal branches (arrows).

condition was then stable. She was given three units of blood because her Hb was 10.9 g/dl and received intravenous n-acetyl cysteine as her plasma paracetamol concentration was 300 mg/l six hours after ingestion. The following day she had a second large haematemesis and after resuscitation with blood and plasma the left gastric artery was embolised with Gelfoam. Thereafter no bleeding occurred, but she developed marked hepatic dysfunction as a consequence of her overdose, the serum bilirubin rising to 79 μ mol/l (4.6 mg/100 ml) and serum alanine transferase (serum ALT; SGPT) to over 500 IU/l (normal up to 32 IU/l). Endoscopic examination six days after embolisation showed that the polypoid lesions had disappeared, and she was discharged a week later when liver function tests had returned to normal.

Discussion

Although aneurysms of the splanchnic arteries are well recognised over half of these occur in the splenic artery,⁷ and aneurysms of the left gastric artery are uncommon. These invariably become manifest after a rupture either into the

peritoneal cavity or, if the aneurysm is submucosal, into the lumen of the stomach, and present with haematemesis or melaena. Not all these aneurysms are arteriosclerotic in origin since they have been reported in children⁸ and young adults.⁶

There is no doubt that visceral angiography is valuable in diagnosing gastrointestinal bleeding; Irving and Northfield reported that if confirmed the diagnosis in 27 out of 35 patients (77%).⁹ Despite performing endoscopy early in our patients a definite cause for bleeding was found only with angiography. We emphasise the importance of selectively catheterising the left gastric artery because in all three patients the aneurysms arose from distal branches of this artery and could not be shown by injection of contrast into the coeliac trunk.

Embolising bleeding arteries is effective in controlling gastrointestinal haemorrhage, and was first introduced in 1972.¹⁰ In our patients there were no complications from this procedure and no further bleeding. We therefore think that selective arterial embolisation is a successful alternative to surgery in arresting acute gastrointestinal haemorrhage and is the treatment of choice when bleeding results from rupture of submucosal aneurysms of the stomach.

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Requests for reprints should be addressed to JDI.

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Lymphogranuloma venereum and granuloma inguinale respond to sulphonamides, and more especially tetracycline. Do they respond to other drugs, in particular chloramphenicol and metronidazole?

Tetracyclines are the most satisfactory treatment for lymphogranuloma venereum. Good results, however, have been claimed for chloramphenicol, 500 mg by mouth four times daily for 14 days or by intramuscular injection, but this antibiotic is not recommended because of potentially dangerous side effects. Erythromycin gives similar results to tetracycline at a dose of 500 mg by mouth four times daily for 14 days. In late cases corticosteroids have been used alone, or with antibiotics, and have been claimed to produce improvement. Metronidazole is not effective. Granuloma inguinale responds to various antibiotics other than the sulphonamides and tetracyclines. Streptomycin is usually effective if given as 1 g intramuscularly twice daily for 14 days. It is very effective if given as 4 g daily in divided doses for five

days.¹ Chloramphenicol produces clinical healing of lesions when administered either by mouth or by intramuscular injection. A total of 2-16 g in divided doses is required, but this antibiotic should be used only in exceptional circumstances because of serious toxic effects. Ampicillin was found to be effective during the Vietnam war at a dose of 500 mg six-hourly for 14 days, and erythromycin is also effective at a similar dosage. Lincomycin given by mouth at a dose of 500 mg six-hourly for 14 days produces good results, but carries with it the risk of pseudomembranous colitis and should be used only exceptionally. Gentamicin intramuscularly at a dose of 1 mg/kg three times a day to a total of 2.4 g has been shown to be effective in New Guinea.² There is no evidence that metronidazole has any effect in this disease.

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