and sludge from wet river beds but only rarely from healthy persons.⁴ The infection is reported rarely in Britain and during 1981 24 isolations from cases of diarrhoea were recorded by Communicable Disease Surveillance Centre (personal communication). It is, however, possible to overlook the presence of the organism if identification is orientated to recognition of the known pathogens from deoxycholate citrate agar—that is, *Shigella* and *Salmonella*. The organism being a late lactose fermenter may, under those circumstances, not be processed. If the Analytical Profile Index 10S system is used for identification, a preliminary oxidase test must be carried out otherwise the organism may be wrongly identified as *Escherichia coli*.

The pathogenetic mechanism of *P. shigelloides* in humans has not yet been defined. Production of a heat-stable enterotoxin has recently been reported from India.⁵ The present case indicates its invasive ability, and *P. shigelloides* should be added to the growing list of organisms able to produce acute colitis.

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(Accepted 21 September 1982)

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Accuracy of early endoscopy in acute upper gastrointestinal bleeding

The accuracy of early endoscopy in acute upper gastrointestinal haemorrhage has been established mainly with reference to the results of barium meal examination.¹ In small series, comparison of findings at endoscopy with those at surgery or necropsy has suggested that endoscopy may miss up to 8% of peptic ulcers.²⁻⁵ We compared the findings at endoscopy in patients with acute upper gastrointestinal bleeding with those at surgery or necropsy, as this has not been reported previously.

Patients, methods, and results

A total of 104 (34%) of 308 consecutive patients referred for early endoscopy for acute upper gastrointestinal bleeding came to surgery (99) or necropsy alone (5). The endoscopies were performed by 11 endoscopists of varying experience, though all had sufficient experience to perform endoscopy without direct supervision and all had access to help from more experienced endoscopists. All endoscopies were performed with end-viewing instruments; side-viewing instruments were also used occasionally.

The main bleeding lesions in the 104 patients (65 men, 39 women aged 16-88 (mean 58) years) were duodenal ulcers (41), gastric ulcers (28), and oesophageal varices (16). Gastric erosions, gastric carcinoma, jejunal ulceration, and Mallory-Weiss tears accounted for the remaining lesions. Endoscopy correctly identified the bleeding lesion in 76 (73%) patients. The sites of bleeding were identified correctly in a further 12 patients but the lesions causing the bleeding (nine duodenal ulcers, one gastric carcinoma, one gastric ulcer, and one Mallory-Weiss tear) could not be seen. Lesions were misinterpreted in two cases; a gastric ulcer proved to be a gastric carcinoma, and an erosion was found at operation to be an acute gastric ulcer. Blood prevented an adequate examination in three patients found subsequently to be bleeding from chronic gastric ulcers. Endoscopy gave incorrect findings in 11 cases (see table). Five of the gastric ulcers (18%) were misdiagnosed, one (4%) was not seen, though

the site of bleeding was identified, while in three (11%) the sites were obscured by bleeding. Five of the duodenal ulcers (12%) were misdiagnosed and nine (22%) were not seen, though the sites of bleeding were identified.

Lesions diagnosed incorrectly at endoscopy

Final diagnosis*	Diagnosis at endoscopy
Gastric erosions	Gastric ulcer
Gastric ulcer	No lesion found
Gastric ulcer	No lesion found
Gastric ulcer	Gastric erosions
Gastric ulcer	Haemorrhagic gastritis
Gastric ulcer	Haemorrhagic gastritis
Duodenal ulcer	No lesion found
Duodenal ulcer	Duodenal bleeding
Duodenal ulcer	Gastric bleeding
Duodenal ulcer	Antral lesion (?carcinoma)
Duodenal ulcer	Bleeding from gastrojejunal anastomosis
Duodenal ulcer	Antral ulcer (bleeding) and duodenal ulcer

*At surgery, necropsy, or both.

Comment

Endoscopy identified the bleeding site or the bleeding lesion correctly in 85% of our patients, and in a further two patients the errors could not be regarded as serious, for benign and malignant gastric ulcers, and gastric erosions and acute gastric ulcers cannot be differentiated reliably at endoscopy. Severe bleeding prevented adequate examination in three cases (3%), which is consistent with previous experience.³ Our failure to diagnose 18% of gastric ulcers and 12% of duodenal ulcers suggests that early endoscopy for gastrointestinal bleeding may not be as accurate as previously supposed. Most of the endoscopies were performed with older, less flexible panendoscopes, which made retrograde examination of the stomach difficult; some of the gastric lesions might have been seen if a more modern panendoscope had been used. We think it unlikely, however, that newer panendoscopes would have given a higher yield in the duodenal cap.

There is no way of knowing what effect our mistakes had on the management of patients. It is unlikely that operation was delayed where bleeding was thought to be coming from a specific site or lesion (table, five patients) or with recurrent or continued bleeding with a negative finding at endoscopy (three patients). Continued conservative treatment could have resulted from incorrect diagnoses of gastritis or erosions (two patients), and an unnecessary operation could have resulted from diagnosing a gastric ulcer rather than erosions (one patient). It seems likely, therefore, that management would have been altered greatly in only three of the 11 patients in whom a clear diagnostic error was made; these three representing only 3% of the whole series.

In practical terms our study indicates that patients should undergo a second endoscopy after an inadequate endoscopy if bleeding recurs and surgery is contemplated or if the findings seem inappropriate to the patient's clinical state and that patients with considerable amounts of blood in their stomach are likely to require urgent surgery.

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(Accepted 21 September 1982)

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