

women with detrusor instability and those with genuine stress incontinence, suggests that future research into aetiological factors of detrusor instability should concentrate on physical, and particularly neurological, aspects.

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Mortality in patients with bleeding peptic ulcer when those aged 60 or over are operated on early

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Death from bleeding peptic ulceration is too easily dismissed as inevitable, and death rates of around 10% indicate unacceptable clinical practice. Endoscopic haemostasis improves results,¹ but improvement can be achieved more simply. We reported previously that early surgery improves results in elderly patients but not in those under 60; we achieved a mortality of 4% in patients over 60 treated with early surgery.² We closed the trial mainly because of the difficulty of holding six surgical firms to a fixed randomisation policy in the face of a considerable difference in mortality in patients aged 60 or over between the two treatment policies being compared (4% with early operation compared with 15% with delayed operation); this decision was criticised.³ We subsequently adopted the policy associated with the lowest mortality, although we no longer regarded the stigmata of recent haemorrhage as an indication for surgery as there is now doubt whether they carry the hazard once thought.⁴ We have audited 342 consecutive patients with defined ulcer bleeding over the subsequent five years. We did not exclude patients even if they had severe coincident malignant disease or were moribund; we do not know of a larger study done in a single hospital.

Patients, methods, and results

We reviewed all patients admitted with upper gastrointestinal bleeding due to proved peptic ulceration from January 1984 to December 1988 (342 patients; 351 admissions). Altogether 214 patients were aged 60 or over. Two hundred and eighteen patients bled from duodenal ulcers or ulcers of the pyloric channel and 124 from gastric ulcers; all were examined by gastroscopy.

Patients were operated on immediately if they had exsanguinating haemorrhage or if a spurting vessel was seen at endoscopy. Patients aged 60 or over were operated on if one episode of rebleeding occurred in hospital, four units of blood or colloid were transfused for initial volume replacement or eight units of blood or colloid were transfused over 48 hours. Younger patients were operated on if two episodes of rebleeding occurred in hospital, eight units of blood or colloid were transfused for initial volume replacement or 12 units of blood or colloid were transfused over 48 hours. Patients were given prophylactic antibiotics and subcutaneous heparin and operated on by experienced surgeons and anaesthetists.

Sixty nine patients fulfilled the criteria for emergency operation, comprising 35 of the 218 with duodenal ulcers and 34 of the 124 with gastric ulcers. Fifty two (24%) of the 214 patients aged 60 or over were

operated on, compared with 17 (13%) of the 128 younger patients. The most common operation for duodenal ulcer was vagotomy and pyloroplasty (21), and the most common operations for gastric ulcer were Billroth I gastrectomy (11) and vagotomy and pyloroplasty with excision of the ulcer (9). In four patients with duodenal ulcer and five with gastric ulcer the only operation was underrunning of the ulcer.

Thirteen patients died from proved haemorrhage of peptic ulcer, a mortality of 4%; the mortality rose with age to 8% in those aged 80 or over (table). Four of these

Mortality in patients with bleeding duodenal or gastric ulcer according to age

Age (years)	Site of ulcer		All patients	Deaths	Mortality (%)
	Duodenum	Stomach			
<50	59	14	73	1	
50-59	32	23	55	3	2
60-69	57	37	94	3	3
70-79	45	39	84	6	7
≥80	25	11	36	3	8
Total	218	124	342	13	4

deaths were in patients with advanced malignancy and two were linked with terminal vascular disease; active treatment was withdrawn in all. Two postoperative deaths occurred (operative mortality 3%), both in patients with severe coincident disease. Thus in patients not dying from other disease and in whom resuscitation was attempted mortality from bleeding peptic ulcer was 2% (7/342). Contributory factors to death included cardiac failure (two patients), cerebrovascular accident (three), respiratory failure (one), and cardiac arrest at endoscopy (one). Nine operations were done for exsanguinating haemorrhage or spurting vessels, 54 for further haemorrhage, and six when transfusion limits were exceeded.

Comment

No magical formula exists for reducing the mortality of a disease. In patients with gastrointestinal haemorrhage mortality is low when a logical protocol is adhered to strictly. Our mortality of 4% (6% in patients aged 60 or over) could be achieved in any district general hospital by applying this protocol.⁵ In addition, senior surgeons and anaesthetists should not delegate an operation to inexperienced doctors.

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