

- ³ Hoare AM. Comparative study between endoscopy and radiology in acute upper gastrointestinal haemorrhage. *Br Med J* 1975; *i*:27-30.
- ⁴ Stevenson GW, Cox RR, Roberts CJC. Prospective comparison of double-contrast barium meal examination and fiberoptic endoscopy in acute upper gastrointestinal haemorrhage. *Br Med J* 1976; *ii*:723-4.
- ⁵ Allan R, Dykes P. A comparison of routine and selective endoscopy in the management of acute gastrointestinal hemorrhage. *Gastrointest Endosc* 1974; *20*:154-5.
- ⁶ Sandlow LJ, Becker GH, Spelberg MA, *et al*. A prospective randomised study of the management of upper gastrointestinal hemorrhage. *Am J Gastroenterol* 1974; *61*:282-9.
- ⁷ Morris DW, Levine GM, Soloway RD, Miller WT, Marin GA. Prospective randomised study of diagnosis and outcome in acute upper gastrointestinal bleeding: endoscopy versus conventional radiography. *Am J Dig Dis* 1975; *20*:1103-9.
- ⁸ Keller RT, Logan GM. Comparison of emergency endoscopy and upper gastrointestinal series radiography in acute upper gastrointestinal haemorrhage. *Gut* 1976; *17*:180-4.
- ⁹ Dronfield MW, McIlmurray MB, Ferguson R, Atkinson M, Langman MJS. A prospective randomised study of endoscopy and radiology in acute upper-gastrointestinal-tract bleeding. *Lancet* 1977; *i*:1167-9.
- ¹⁰ Graham DY. Limited value of early endoscopy in the management of acute upper gastrointestinal bleeding: prospective controlled trial. *Am J Surg* 1980; *140*:284-90.
- ¹¹ Peterson WL, Barnett CC, Smith HJ, Allen MH, Corbett DB. Routine early endoscopy in upper-gastrointestinal-tract bleeding. A randomised, controlled trial. *N Engl J Med* 1981; *304*:925-9.
- ¹² Eastwood GL. Does early endoscopy benefit the patient with active upper gastrointestinal bleeding? *Gastroenterology* 1977; *72*:737-9.
- ¹³ Colin-Jones DG, Cockel R, Schiller KF. Current endoscopic practice in the United Kingdom. *Clin Gastroenterol* 1978; *7*:775-86.
- ¹⁴ Waldrom R, Davis M, Nunnerley H, Williams R. Emergency endoscopy after gastrointestinal haemorrhage in 50 patients with portal hypertension. *Br Med J* 1974; *iv*:94-6.

(Accepted 13 November 1981)

Comparison of surgical and medical management of bleeding peptic ulcers

K D VELLACOTT, M W DRONFIELD, M ATKINSON, M J S LANGMAN

Abstract

During 1975-80, 908 patients admitted to Nottingham hospitals with gastrointestinal bleeding and found to have gastric or duodenal ulcers were analysed retrospectively for short-term outcome of treatment. Overall one-quarter of all patients underwent operation, but when the years 1975-7 were compared with 1978-80 the operation rate fell from one in three to just over one in five. Death rates were much lower in patients treated medically than in those who underwent operation, and the risks of operation were greater for patients with gastric ulcer. Less conventional operations were attended by greater mortality. Almost all patients who died during medical treatment and three-quarters of those who died after operation were over 65. No differences in age or clear variations in haemoglobin concentrations or transfusion requirements were found between the earlier and later periods.

Reduction in operation rates had no appreciable effect on mortality, despite the accepted view that early operation is advisable.

Introduction

Over half of all patients admitted to British hospitals with haematemesis and melaena are found to have peptic ulcers. Though questionnaires completed by gastroenterologists indicate varied beliefs about the needs and timing of operation for bleeding peptic ulcer, it is generally suggested that the elderly, those with a history of bleeding ulcer or dyspepsia, and those

with recurrent bleeding in hospital, particularly from a gastric ulcer, often need operation.

Vigorous early diagnostic policies and therapeutic measures have become the rule in the past 30 years, and lately fiberoptic endoscopy and specific antiulcer treatment have been widely used, though without clear evidence that they influence outcome. We suggested in a limited comparative study of two hospitals in Nottingham that wide recourse to early operation may not necessarily be helpful.¹ We now present the results of a large survey of outcome in bleeding peptic ulcer in Nottingham during a period when the overall operation rate had fallen appreciably.

Patients and methods

We collected information about the outcome in over 900 patients admitted to Nottingham hospitals with bleeding gastric or duodenal ulcer from 1975 to 1980 by reference to hospital inpatient diagnostic indices and to records held in hospital endoscopy units. The Nottingham City and General hospitals were the only acute admitting hospitals in Nottingham up to 1979, when the General Hospital was replaced by the University Hospital. Patients were admitted to these hospitals according to a daily rota system. Figures for the City Hospital were a consecutive series from late 1975 to the end of 1980. Figures for 1976 to 1978 and for 1980 represent complete series for the General and University hospitals, respectively. In the transfer year (1979) we were unable to document all patients with haematemesis and melaena admitted to the General or University hospital.

A total of 1730 patients entered controlled trials of the management of bleeding; 908 had gastric or duodenal ulcer.

Information on age, severity of bleeding, transfusion requirements, treatment, and outcome was systematically recorded during the admission. We record the short-term outcome by the time of hospital discharge or death in the 908 patients. All patients were admitted under the care of general physicians and referred for a surgical opinion at the discretion of the physicians concerned. Between 1975 and 1979 diagnostic procedures were carried out during a controlled trial comparing radiology with endoscopy, according to a prearranged randomisation schedule, and the results of that study are given in our accompanying paper. Thereafter patients at both hospitals were entered into a further trial, still in progress, comparing the value of two medical treatments—antifibrinolytic with tranexamic acid, and antisecretory with cimetidine.

City Hospital, Nottingham NG5 1PB

K D VELLACOTT, MB, FRCS, surgical research fellow (now senior registrar in surgery, Bristol Royal Infirmary, Bristol)

M W DRONFIELD, DM, MRCP, senior registrar in medicine (now consultant physician, Peterborough District Hospital, Peterborough)

M J S LANGMAN, MD, FRCP, professor of therapeutics

University Hospital, Nottingham NG7 2UH

M ATKINSON, MD, FRCP, consultant physician

TABLE I—Operation rate for each year during 1975-80

	Patients with gastric ulcer		Patients with duodenal ulcer	
	No	%	No	%
1975 (part)	7/19	36.8	7/17	41.2
1976	28/80	35.0	40/109	36.7
1977	23/74	31.0	35/118	29.7
1978	19/74	25.7	17/87	19.5
1979	8/51	15.7	12/70	17.1
1980	21/100	21.0	28/109	25.7
Total	106/398	26.6	139/510	27.3

*Earlier v later periods: $\chi^2 = 6.8$, $p < 0.01$ for gastric ulcer; $\chi^2 = 8.9$, $p < 0.005$ for duodenal ulcer.

TABLE II—Death rates in medically and surgically treated patients

	Treatment				Overall	
	Medical		Surgical		No of patients	No (%) of deaths
	No of patients	No (%) of deaths	No of patients	No (%) of deaths		
	<i>Gastric ulcer</i>					
1975-7	115	8 (7.0)	58	16 (27.6)	173	24 (13.9)
1978-80	177	13 (7.3)	48	16 (33.3)	225	29 (12.9)
	<i>Duodenal ulcer</i>					
1975-7	162	10 (6.2)	82	13 (15.9)	244	23 (9.4)
1978-80	209	17 (8.1)	57	9 (15.8)	266	26 (9.8)

No changes in death rates recorded with time statistically significant.

TABLE III—Age and sex distribution and indices of severity of bleeding

	Patients with gastric ulcer		Patients with duodenal ulcer	
	1975-7	1978-80	1975-7	1978-80
Total No	173	225	244	266
Mean age in years : SD	66 ± 13	68 ± 16	58 ± 17	63 ± 17
No (%) of men	105 (61.0)	92 (41.0)	178 (73.0)	226 (85.0)
No (%) with haemoglobin < 10 g/dl	131 (75.7)	144 (64.0)	146 (59.8)	193 (72.6)
No (%) transfused with over 5 units of blood	58 (33.5)	73 (32.6)	74 (30.3)	87 (32.7)

TABLE IV—Patients dying during medical treatment

	No of patients	Mean age in years (range)	No aged over 65	No of men	Causes of death				
					Haemorrhage	Cardio-respiratory disease	Associated malignancy	Dementia and bleeding	Perforation
Gastric ulcer	21	76 (51-89)	17	14	14	1	6*	0	0
Duodenal ulcer	27	75 (62-94)	24	17	11	8	4*	1	1

*Brain, gall bladder, colon, lung, prostate, and tongue one each; kidney two; uncertain origin two.

TABLE V—Patients dying as a result of operation

	No of patients	Mean age in years (range)	No aged over 65	No of men	Causes of death			
					Peritonitis	Postoperative haemorrhage	Cardio-respiratory disease	Renal failure and shock
Gastric ulcer	32	71 (46-89)	22	19	6	3	21	2
Duodenal ulcer	22	72 (41-86)	20	13	6	2	14	0

TABLE VI—Date of operation according to diagnosis and time from admission. Figures are numbers of patients

	Day of operation				Total
	First	Second	Third	Later	
	<i>Gastric ulcer</i>				
1975-7	23	14	3	18	58
1978-80	12	10	7	14	43
	<i>Duodenal ulcer</i>				
1975-7	23	14	9	36	82
1978-80	8	20	12	15	55

Results

Of all 908 patients with bleeding gastric or duodenal ulcer, 245 (27%) were operated on during the admission (table I), the proportions differing little for gastric or duodenal ulcer. The chances of operation being performed diminished with time for both types of ulcer, falling from one in three cases in 1975-7 to just over one in five in 1978-80. Differences for both gastric and duodenal ulcer were highly significant ($\chi^2 = 6.8$, $p < 0.01$; and $\chi^2 = 8.9$, $p < 0.005$, respectively).

Table II shows the death rates. These were much lower in medically treated patients than in patients subjected to operation, and the rates in medically treated patients differed little whether the diagnosis was gastric or duodenal ulcer. Patients with duodenal ulcer treated by operation were about twice as likely to die as patients with such ulcers managed medically, while for gastric ulcer there was a fourfold difference.

When the periods 1975-7 and 1978-80 were compared the combined death rates for all patients with gastric ulcer showed a slight decrease and those for patients with duodenal ulcer a marginal increase, but in neither case was the difference significant. Death rates in medically treated patients with gastric and duodenal ulcer and in surgically treated patients with gastric ulcer rose slightly during 1978-80. But this was explained by the fall in the proportions of patients subjected to operation in the later period.

Table III shows that the mean ages of the patients changed little between the two periods, though the proportions of men and women varied, particularly for gastric ulcer. Transfusion requirements, as judged by the need for transfusions of over 5 units of blood, also changed little in patients with gastric ulcer, though haemoglobin concentrations under 10 g/dl were slightly more common in the earlier than the later period. In contrast, haemoglobin concentrations tended to be lower in the later period and transfusion requirements slightly higher in patients with duodenal ulcer.

Of the 48 patients who died during medical treatment, 41 were over 65. Twenty-five deaths were thought to have resulted from the direct effects of bleeding; table IV shows other causes of death.

Of the 54 surgically treated patients who died, 42 were over 65, and rather more of these were men (table V). Seventeen were thought to have died as a direct result of the operation. The remaining 37 died in the postoperative period from various causes, the commonest being cardiorespiratory disease with cardiac failure, pulmonary embolism, and pneumonia.

Bilroth I gastrectomy was the most common operation for gastric

ulcer, and vagotomy and drainage the most common for duodenal ulcer. Death rates were lower after vagotomy and drainage (10%) than after gastrectomy (23%), but death rates tended to be high with procedures such as underrunning and ulcer excision, total gastrectomy for gastric ulcer, or partial gastrectomy for duodenal ulcer. These raised mortality rates almost certainly reflected difficulties encountered by surgeons, who then undertook less conventional procedures.

Table VI shows that the proportions of patients operated on in the first 24 hours fell slightly in the later period, but there were no other consistent trends.

Discussion

Our results show that over five years the operation rates fell noticeably for gastric and duodenal ulcer but that there was no real change in overall mortality patterns. It is commonly believed that early operation is beneficial in elderly patients because they withstand the effects of bleeding badly, but our results do not confirm this. Comparison of patients treated in earlier and later periods showed little or no difference in age distributions, nor any coherent pattern of variation in haemoglobin concentrations or transfusion requirements; this suggests that there was no real difference in the severity of bleeding between the two periods.

The operation rates in the early period of our survey were similar to or somewhat lower than those described previously in Britain,² and it therefore seems unlikely that we had reversed an unduly aggressive surgical policy.

Throughout the period from 1975 to 1979 endoscopy or double-contrast radiography was used for diagnosis, and the clinical value of this is reported in our accompanying paper. Nothing in the results of that study suggests that the method of diagnosis affected outcome. Similarly, preliminary analysis of results of medical treatment with tranexamic acid and cimetidine in a trial still in progress shows little to suggest that these have any material effect on the clinical outcome.

The reasons for the overall fall in operation rate are not clear and are likely to be at least threefold. Firstly, the coherent pattern of diagnostic support may have persuaded clinicians to have greater confidence in conservative measures when they had a clear diagnosis available. Secondly, the use of treatments that included histamine H₂ antagonists may have persuaded physicians and surgeons to delay operative intervention even though evidence of the value of such treatment in managing bleeding is doubtful. Thirdly, physicians and surgeons were aware of earlier data suggesting that early and frequent recourse to operation was not necessarily beneficial.

The results of individual operations suggest that the less conventional procedures were attended by greater mortality rates. The use of these procedures, however, was likely to be occasioned by the specific difficulties encountered by the surgeon at the time of operation.

The reduction in the proportions of procedures carried out early seemed to have no specific effects on the overall results, despite commonly held views that early selection for operation is advisable. Some of the patients who have been treated conservatively may return to hospital with a further life-threatening haemorrhage. Such evidence as there is suggests that a few patients discharged from hospital with bleeding duodenal ulcer have a further episode and that this is rarely a cause of death.³ Death from recurrent bleeding gastric ulcer may be more frequent but is likely still to be rare, though the evidence is fragmentary.

Our findings may be contrary to accepted belief but agree with suggestions made elsewhere. Thus Allan and Dykes noted that early postoperative death was common after emergency operations for upper gastrointestinal bleeding,⁴ and we have found likewise. Frequent deaths from haemorrhage may be unacceptable, but if the choice lies between death from bleeding and postoperative death in an increasingly elderly population, then better methods of conservative or postoperative management are needed.

The value of conservative or operative management needs to be assessed by a controlled trial. There are, however, considerable problems in designing a trial in which undue restriction of clinical freedom does not act to the detriment of the patient.

We acknowledge the co-operation of the Nottingham physicians and surgeons in this investigation.

References

- ¹ Dronfield MW, Atkinson M, Langman MJS. Effect of different operation policies on mortality from bleeding peptic ulcer. *Lancet* 1979; *i*:1126-8.
- ² Schiller KFR, Truelove SC, Williams DG. Haematemesis and melaena with special reference to factors influencing the outcome. *Br Med J* 1970; *ii*:7-14.
- ³ Langman MJS, Harvey RF. The late results of medical and surgical treatment for bleeding duodenal ulcer. *Q J Med* 1970; **39**:539-47.
- ⁴ Allan R, Dykes P. A study of the factors influencing mortality rates from gastrointestinal haemorrhage. *Q J Med* 1976; **45**:533-50.

(Accepted 13 November 1981)

BRIONY, OR WILD VINE. It is called Wild, and Wood Vine, Tamus, or Ladies' Seal. The white is called White Vine by some; and the black, Black Vine.

The common White Briony grows ramping upon the hedges, sending forth many long, rough, very tender branches at the beginning, with many very rough, and broad leaves thereon, cut (for the most part) into five partitions, in form very like a vine leaf, but smaller, rough, and of a whitish hoary green colour, spreading very far, spreading and twining with his small claspers (that come forth at the joints with the leaves) very far on whatsoever stands next to it. At the several joints also (especially towards the top of the branches) comes forth a long stalk bearing many whitish flowers together on a long tuft, consisting of five small leaves a-piece, laid open like a star, after which come the berries separated one from another, more than a cluster of grapes, green at the first, and very red when they are thorough ripe, of no good scent, but of a most loathsome taste provokes vomit. The root grows to be exceeding great, with many long twines or branches going from it, of a pale whitish colour on the outside, and more white within, and of a sharp, bitter, loathsome taste.

It grows on banks, or under hedges, through this land; the roots lie very deep. It flowers in July and August, some earlier, and some later than the other.

They are furious martial plants. The root of Briony purges the belly with great violence, troubling the stomach and burning the liver, and therefore not rashly to be taken; but being corrected, is very profitable for the diseases of the head, as falling sickness, giddiness, and swimings, by drawing away much phlegm and rheumatic humours that oppress the head, as also the joints and sinews; and is therefore good for palsies, convulsions, cramps, and

stitches in the sides, and the dropsy, and for provoking urine; it cleanses the reins and kidneys from gravel and stone, by opening the obstructions of the spleen, and consume, the hardness and swelling thereof. The decoction of the root in wine, drank once a week at going to bed, cleanses the mother, and helps the rising thereof, expels the dead child; a dram of the root in powder taken in white wine, brings down their courses. An electuary made of the roots and honey, doth mightily cleanse the chest of rotten phlegm, and wonderfully help any old strong cough, to those that are troubled with shortness of breath, and is good for them that are bruised inwardly, to help to expel the clotted or congealed blood. The leaves, fruit, and root do cleanse old and filthy sores, are good against all fretting and running cankers, gangrenes, and tetter and therefore the berries are by some country people called tetter-berries. The root cleanses the skin wonderfully from all black and blue spots, freckles, morpew, leprosy, foul scars, or other deformity whatsoever; also all running scabs and manginess are healed by the powder of the dried root, or the juice thereof, but especially by the fine white hardened juice. The distilled water of the root works the same effects, but more weakly; the root bruised and applied of itself to any place where the bones are broken, helps to draw them forth, as also splinters and thorns in the flesh; and being applied with a little wine mixed therewith, it breaks boils, and helps whitlows on the joints.—For all these latter, beginning at sores, cancers, &c. apply it outwardly, mixing it with a little hog's grease, or other convenient ointment.

As for the former diseases where it must be taken inwardly, it purges very violently, and needs an abler hand to correct it than most country people have. (Nicholas Culpeper (1616-54) *The Complete Herbal*, 1850.)