Surgical treatment in asymptomatic patients with duodenal ulcers as a prophylaxis against haemorrhage

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Summary

In a group of 17 patients who underwent surgery for chronic duodenal ulceration because of past bleeding but without current symptoms, one patient re-bled with a follow-up of 81 patient years, as compared to one bleed over 6.8 patient years before surgery. This suggests that surgery is protecting these patients against recurrent episodes of haemorrhage.

Introduction

Occasionally, a patient with chronic duodenal ulceration presents with bleeding associated with very little else in the way of symptoms. The results of the British Society of Gastroenterology survey of management in upper gastro-intestinal haemorrhage were published in 1980 (Thomas *et al.*, 1980). Respondents were asked for their recommendations regarding surgery in a hypothetical patient with a duodenal ulcer and previous minor dyspepsia who has an episode of acute bleeding which stops after blood transfusion of 4 units. The absence of data guiding the surgeon in his decision is shown by the survey's results; that is, 20% never operate, 8% always do, with 72% split between 'sometimes' and

'usually'. Since haemorrhage is the most dangerous complication in this condition, it is important to establish how such patients can be protected for the future. Accordingly, patients who presented with haemorrhage from their duodenal ulcers, who were otherwise virtually asymptomatic and who were treated surgically, were followed-up to see if other bleeding episodes had occurred.

Methods

From a retrospective review of all patients undergoing surgery for duodenal ulcer in the 10 years from 1970 to 1980, 17 were identified who had previously had significant episodes of bleeding but were not bleeding at the time of the decision to operate and who had little in the way of indigestion or other symptoms that could be associated with chronic duodenal ulceration. The details of the patients are recorded in Table 1.

Apart from clinical evidence the diagnosis was established by barium meal alone in 7 patients, by endoscopy alone in 3, and by a combination of both barium meal and endoscopy in the remainder.

TABLE 1. Pre-operative data

Age/Sex (years)	Diagnosis	PAO _{pg} (mmol/hr)	Bleeding (amount transfused)
1. 40/M	Barium	38.2	Haematemesis (7 units)
2. 53/M	Barium	14.9	Melaena (4 units)
3. 46/M	Barium	36.5	Melaena (4 units)
4. 54/M	Barium and endoscopy	37.6	Haematemesis (3 units)
5. 63/M	Endoscopy	—	Haematemesis (5 units)
6. 56/M	Barium	35.5	Haematemesis (2 units)
7. 73/F	Barium	—	Haematemesis (2 units)
8. 20/M	Barium	37.4	Haematemesis × 2 (2 units)
9. 39/F	Barium	23.4	Melaena (4 units)
10. 21/F	Barium and endoscopy	—	Haematemesis (2 units)
11. 40/M	Endoscopy	—	Haematemesis (4 units)
12. 51/M	Barium and endoscopy	31.0	Melaena (2 units)
13. 48/M	Barium and endoscopy	18.5	Melaena (4 units)
14. 41/M	Barium and endoscopy	34.8	Haematemesis (6 units)
15. 62/M	Barium and endoscopy	—	Melaena (6 units)
16. 33/F	Barium and endoscopy	24.0	Haematemesis (3 units)
17. 79/M	Endoscopy	23.0	Melaena × 2 (9 units)

PAO_{pg} = Peak acid output to pentagastrin.

Results

Extent of haemorrhage

Haematemesis occurred in 10 patients, melaena alone in the remaining 7. In 19 bleeding episodes in these 17 patients average blood replacement was 4 units. The least blood given was 2 units and the most 9 units.

Ten patients had a haemoglobin of less than 10.5 g/dl when admitted for the active bleeding episode.

Peak acid output to pentagastrin

This was measured in 12 of the 17 patients, the mean secretion being 29.6 mmol/hr (s.d. 8.32, range 14.9–38.2).

Surgical treatment

Eleven patients underwent proximal gastric vagotomy (PGV) alone; one patient received PGV with pyloroplasty of a modified Finney type (P_F); 4 patients underwent selective vagotomy, 2 with pyloroplasty, one with gastro-jejunostomy and one with an antrectomy of Billroth II type. (The patient who underwent selective vagotomy with gastro-jejunostomy in 1975 subsequently perforated in 1977 and an antrectomy of the Billroth I type was then carried out); one patient underwent truncal vagotomy and pyloroplasty.

Follow-up (see Table 2)

Following surgery, patients are seen at intervals of 3 months, 6 months, one year and thereafter annually and all patients within this follow-up have

TABLE 2. Operation and postoperative follow-up

Operation	Follow-up (years)	Visick grade
1. PGV 1970	10	I
2. SV and P _F 1972	8	II
3. SV and P _F 1972	8	(IV)*II
4. PGV and P _F 1973	7	I
5. TV and P _F 1973	7	I
6. PGV 1974	6	I
7. PGV 1974	6	I
8. PGV 1975	5	I
9. PGV 1975	5	I
10. SV and GJ (1975)	5	(IV)
BI 1977		I
11. PGV 1976	4	III
12. PGV 1977	3	I
13. PGV 1978	2	I
14. PGV 1978	2	II
15. SV and BII 1979	1	I
16. PGV 1979	1	I
17. PGV 1979	1	I

*=re-bleed; PGV=proximal gastric vagotomy; SV=selective vagotomy; P_F=pyloroplasty of a modified Finney type; TV=truncal vagotomy; GJ=gastro-jejunostomy; BI=Billroth I-type antrectomy; BII=Billroth II-type antrectomy.

been seen within the last year (1981). The average time from operation is 4 years and 8 months with a range from one to 10 years.

Re-bleeding and recurrence

One patient has suffered an episode of re-bleeding. In 1972 selective vagotomy and pyloroplasty was performed and a recurrent episode of haemorrhage occurred in 1976. No further operation or further treatment was required and on this occasion blood transfusion was not required.

The patient who underwent selective vagotomy and gastro-jejunostomy in 1975 perforated a gastro-jejunal ulcer in 1977 and at the time of this perforation an antrectomy was performed with a Billroth I type of anastomosis. She has remained well following this episode of recurrent ulceration.

Discussion

A group of patients was chosen for whom the decision to operate was unusually difficult. They had all had significant and even dangerous bleeding episodes in the past but had nothing in the way of serious indigestion at the time of operation. The decision therefore related to a 'trade-off' between on the one hand protection against bleeding in the future and on the other, the likelihood of developing post-vagotomy symptoms after surgery, such as dumping, bilious vomiting or diarrhoea.

Bleeding from a duodenal ulcer is the most hazardous complication and accounts for nearly 50% of the deaths due directly to ulcer disease (Wangensteen, 1954). Pulvertaft (1968) found that if duodenal ulcers present with haemorrhage in a man there was a 75% chance that re-bleeding would occur within 10 years or, alternatively, that one bleeding episode could be expected for 13.33 patient years. There seemed good reason to suppose, therefore, that not only would these patients re-bleed but also this would be attended by significant danger. So far only one of the group has had an episode of re-bleeding, which represents one bleed for 81 patient years compared to one bleed for 6.8 patient years before surgery. The episodes of recurrence and bleeding have both occurred within 4 years of operation, and this suggests that surgery is protecting the patients against recurrent episodes of haemorrhage.

References

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