Current Practice

DISEASE OF THE DIGESTIVE SYSTEM

Duodenal Ulcer—II

IAIN E. GILLESPIE,* M.D., F.R.C.S.

(Last week Mr. Gillespie considered the diagnosis and medical management of duodenal ulcer. This week's article deals with the indications for operation and the type of operation that can be done. It ends with a list of references to both articles.)

Indications for Elective Operation

The commonest reason for advising operation in a patient with duodenal ulcer is the failure of simple conservative medical measures to control the symptoms adequately. Few patients are considered for surgical treatment before the clinician is satisfied that the measures outlined above have been conscientiously applied, and that in spite of these measures relapses of typical ulcer dyspepsia have become more frequent, more severe, and more prolonged. It is difficult to lay down hard and fast rules such as a definite length of history beyond which operation should be advised automatically. Patients vary considerably in the periodicity of their ulcer dyspepsia, and any individual patient may himself vary in the frequency and severity of relapses from year to year. The majority of duodenal ulcer patients coming to operation have had symptoms for between 5 and 10 years,^{12 13} and an appreciable proportion have a history going back more than 20 years. Factors other than simply the length of time over which symptoms have persisted are generally taken into consideration in reaching a decision for operation in a particular patient.

When a patient complains that antacids, which formerly gave satisfactory relief, are no longer effective it seems reasonable to consider operative treatment without undue delay even if the history is relatively short. It is unreasonable to insist on waiting a fixed period of time if the patient has tried a large variety of antacid medications in adequate dosage without obtaining pain relief. On the other hand, the patient who enjoys long remissions of up to a year at a time and can fairly readily control his relapses when they occur by a simple antacid preparation may well not be advised to have surgical treatment unless some complication develops.

Loss of time from work through ulcer symptoms is another major factor, and this applies mainly to young and middle-aged men with families dependent on their continuing in regular employment. In the case of housewives symptoms interfering with their ability to perform their full household duties will also usually influence the decision towards operation. Repeated interruption of sleep by typical ulcer pain is yet another factor which might influence a decision towards surgery. When the pain begins to radiate through to the back this generally denotes a fairly severe ulcer with perhaps retroperitoneal penetration, and it is likely that surgical measures will eventually be required. Vomiting, particularly of a retention nature, suggests that pyloric stenosis is occurring, and again would usually be taken to favour operation. It is often remarkable, however, how a few days' rest in bed may allow the signs of "pyloric

stenosis" to subside, with cessation of vomiting, the disappearance of an obvious succussion splash, and shrinkage of the gastric outline on radiological examination.

Where there is a strong family history of peptic ulceration, particularly in the patient's immediate relatives, there is again a strong likelihood that operation will eventually be required, and a decision for surgical treatment may well be taken earlier than in those without such a strong family history.

It is difficult to assess the risks of complications such as perforation or haemorrhage in an individual case, but there is some evidence that patients with a previous history of haematemesis or melaena may be more prone to recurrence of this symptom. Between 30 and 50% of patients with a previous perforation of a duodenal ulcer treated by simple suture are likely to require later definitive surgery for the ulcer. There is therefore good reason to take the occurrence of either complication in the history of the patient with duodenal ulcer as being additional factors tending in favour of operation.

The question of malignant change only enters into consideration in the case of gastric ulcer, for it is virtually unknown for a chronic duodenal ulcer to become malignant.

Finally, with regard to blood groups it has been indicated that patients of blood group O, particularly those who are unable to secrete the blood group secretor substances in the gastric mucus, are slightly more likely to require surgical treatment than those belonging to other groups. However, there is recent evidence¹⁴ that group O non-secretor subjects are also more prone to develop stomal ulceration; so that if such patients are operated on they also have a slightly increased risk of further peptic ulcer trouble. In view of this confusing picture the blood group status should not influence the decision.

Risks of Operation

Every operation (like every form of effective medical therapy) is attended by some measure of risk of complication, and when advising a patient to undergo operation it is well to assess whether the severity of the disability caused by the ulcer is sufficient to justify the small but distinct risks. The mortality of an elective procedure for an essentially benign condition should nowadays generally be small, preferably less than 1%, though it is difficult to emulate the complete lack of operative deaths recorded from the admirable series of Goligher *et al.*¹⁵ In addition, a minority of patients may develop one of the variety of postoperative symptoms or symptom-complexes known to occur after all types of gastric operation. Fortunately the incidence of postoperative sequelae is quite small. Many subside with the passage of time or are controlled by simple measures, but a hard core may require repeated and complex therapeutic measures. Although some of the postoperative sequelae have a readily explained organic physiological basis, there is a distinct impression that patients with minimal history of symptoms, and those with signs of emotional instability pre-

* Senior Lecturer in Surgery, University of Glasgow.

operatively may be particularly prone to these postsurgical symptoms. For this reason surgeons generally are more confident about a trouble-free convalescence in ulcer patients having elective operation with a long severe history of dyspepsia behind them, and are perhaps a little more reluctant to accept for surgery patients showing signs of psychological abnormality. There is currently much interest in trying to assess personality and other psychometric measurements in duodenal ulcer patients in the hope that some more objective guide may be available to aid in this aspect of preoperative selection.

Type of Operation

The common aim of most elective operations for duodenal ulcer is permanently to reduce the capacity of the stomach to secrete acid and pepsin, in the belief that the hypersecretion of these substances is causally related to the ulcer. In spite of much indirect evidence this assumption remains unproved, and it may well be that the hypersecretion is simply a reflection of the underlying pathological mechanism which has caused the ulcer rather than that acid-activated pepsin has actually initiated the ulcerative process. There is no doubt, however, that in the vast majority of instances the measures taken to reduce the acid and pepsin secretion do result in healing of the ulcer and protection against further ulceration. Extending the argument that hypersecretion is an aetiological factor, there is considerable evidence that the excess secretion is vagally mediated, and for this reason vagotomy with a simple drainage procedure is currently in vogue as the elective operation of choice of many surgeons. The operative mortality seems to be acceptably low, but the incidence of recurrent ulcer is certainly higher than following gastric resection. The majority of these recurrences—if not all of them—are due to the vagotomy being incomplete, and this is perhaps the most important obstacle to the uniform acceptance of vagotomy. A drainage procedure is required to accompany vagotomy since vagal denervation alone has been found to lead to undue gastric stasis and vomiting. The two procedures most widely employed are gastrojejunostomy and pyloroplasty. Although theoretically the latter might seem a more sound physiological procedure, it is not as yet apparent whether one holds distinct advantages over the other. Perhaps the most widely discussed complication to follow vagotomy is diarrhoea. There is great variation in the reported occurrence of this symptom and its severity in different series. Most surgeons find that although there is a general tendency towards increasingly frequent bowel motions following vagotomy with drainage this amounts to disability only in a very small proportion of patients.

In an attempt to avoid vagal denervation of abdominal organs other than the stomach, various forms of "selective" vagotomy have been introduced in recent years. Claims that these procedures give adequate protection against recurrent ulceration, and diminish the incidence of other sequelae, require confirmation from further careful studies.

Adequate reduction of gastric acid and pepsin secretion can also be achieved by partial gastrectomy, and though published reports show a higher mortality rate than that of vagotomy with drainage this form of operation is less likely to be followed by a recurrent ulcer. The principal complications which may follow gastrectomy include nutritional disorders such as weight loss, steatorrhoea, protein and vitamin malabsorption, haematological defects such as iron deficiency and megaloblastic anaemia, "dumping symptoms," such as postprandial epigastric fullness, fainting, sweating, dizziness, and the desire to lie down, and bilious vomiting. The more incapacitating symptoms of the dumping syndrome and bilious vomiting fortunately occur in only a small proportion of gastrectomized patients, but the management problems they present are often extremely difficult ones. Long-term follow-ups of substantial numbers of

post-gastrectomy patients reveal a fairly high incidence of iron-deficiency anaemia and bone disorders, the signs of which often develop clinically many years after the operation.

It is still a little early to be certain about the incidence of these latter abnormalities following the simpler procedure of vagotomy with drainage, but the few preliminary reports which are available suggest that this operation may not be entirely free of such late sequelae.

The combination of vagotomy with a limited partial gastrectomy has been used in several surgical centres in the hope that removal of both the vagal and gastrin influences on gastric secretion might give greater protection against recurrent ulceration than either procedure alone. It was also hoped that with the relatively small proportion of stomach removed there be reduced chance of the troublesome postoperative sequelae met with after a more radical gastrectomy. Certainly the reported recurrent ulcer rates following this combined operation are encouragingly small. However, the mortality rate as might be expected lies intermediate between that of vagotomy with the simple drainage procedure and partial gastrectomy, and it remains to be seen whether the occurrence of postoperative sequelae will be substantially less than from either of the other two more commonly employed procedures.

One final word should be said about the management of patients once the elective operation has been performed. In spite of the rather long list of complications which may follow the various operative procedures it should be emphasized that they occur in but a small minority, and the majority of patients are able to eat normally for the remainder of their lives without fear of return of ulcer or other symptoms. They should be advised after operation that further dietary restrictions are unnecessary and that they should plan to return to a normal daily routine.

REFERENCES

- MacKay, C., *Brit. med. J.*, 1966, 1, 701.
- Billington, B. P., *Gut*, 1965, 6, 121.
- Kay, A. W., *Brit. med. J.*, 1953, 2, 77.
- *Lancet*, 1967, 1, 291.
- Langman, M. J. S., *Hosp. Med.*, 1967, 1, 383.
- Lennard-Jones, J. E., and Babouris, N., *Gut*, 1965, 6, 113.
- Hunt, J. N., and Wales, R. C., *Brit. med. J.*, 1966, 2, 13.
- Sun, D. C. H., *Amer. J. dig. Dis.*, 1964, 9, 706.
- Truelove, S. C., *Brit. med. J.*, 1960, 2, 559.
- Doll, R., Jones, F. A., and Pygott, F., *Lancet*, 1958, 1, 657.
- Forrest, A. P. M., *Postgraduate Gastroenterology*, ed. by Thomson, T. J., and Gillespie, I. E., London, 1966, p. 279.
- Thoroughman, J. C., and Ginglych, G. W., *Results of Surgery for Peptic Ulcer*, ed. by Postlethwaite, R. W., and Thoroughman, J. C., Philadelphia, 1963, p. 109.
- Kemp, D., *Gut*, 1967, 8, 151.
- Langman, M. J. S., Doll, R., and Saracci, R., *ibid.*, 1967, 8, 128.
- Goligher, J. C., Pulvertaft, C. N., and Watkinson, G., *Brit. med. J.*, 1964, 1, 455.

B.M.J. Publications

The following are available from the Publishing Manager, B.M.A. House, Tavistock Square, London W.C.1. The prices include postage.

<i>Is There an Alternative?</i>	Price 7s. 6d.
<i>Treatment of Common Skin Diseases</i>	Price 10s.
<i>Obstetrics in General Practice</i>	Price 32s. 6d.
<i>Child Care</i>	Price 32s. 6d.
<i>Charles Hastings and Worcester</i>	Price 3s. 6d.
<i>Health Centres and Group Practices</i>	Price 3s. 6d.