Proton pump inhibition is a feasible primary alternative to surgery and balloon dilatation in adult peptic pyloric stenosis (APS): Report of six consecutive cases

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ABSTRACT

INTRODUCTION Surgery has been the gold standard in the treatment of adult pyloric stenosis (APS). The introduction of proton pump inhibitors (PPIs) in 1989 revolutionised the treatment of peptic ulcer disease and its complications.

PATIENTS AND METHODS We carried out a prospective study to evaluate the effectiveness of PPIs as an alternative to surgery for treatment of APS. Six consecutive patients admitted with a diagnosis of adult peptic pyloric stenosis between November 1999 and August 2002 were studied. The diagnosis was confirmed with endoscopy. All patients were commenced on a twice-daily dose of intravenous PPI. This was changed to oral treatment after 2 days. Main outcome measures evaluated were resolution of symptoms on PPIs and failure of medical therapy.

RESULTS There were five females and one male. Median age at diagnosis was 72 years (range, 30–90 years). Median duration of symptoms was 2 weeks (range, 1–5 weeks). Of the patients, five had a history of peptic ulcer disease. Complete resolution was achieved in 5 patients (83%). Median duration for resolution of symptoms was 9 days (range, 5–14 days). All patients were changed to oral PPIs after 2 days. One patient did not respond to oral therapy and required surgical intervention (pyloroplasty). Median follow-up was 26 months (range, 6–48 months). There was no recurrence of symptoms. All patients were discharged on low-dose PPI.

CONCLUSIONS This study supports the view that proton pump inhibitors are a safe and feasible alternative to surgery in adult pyloric stenosis secondary to peptic ulcer disease.

KEYWORDS

Pyloric stenosis – Gastric outlet obstruction – Proton pump inhibitors

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Traditionally, surgery has been the principal treatment option for benign peptic pyloric stenosis.¹ Sippy was the first to report, in 1915, that peptic pyloric stenosis will respond to acid suppressant medical treatment.² The availability of effective acid suppressant therapy in the form of proton pump inhibitors (PPIs) has revolutionised the treatment of peptic ulcer disease and diminished its complications including adult pyloric stenosis (APS).³ The published literature on this issue consists of few small cohort studies which describe the use of PPIs for successful treatment of APS.^{5–6} We present a series of six consecutive patients with APS who were successfully treated with PPIs.

Patients and Methods

Prospectively, six consecutive, unselected patients admitted between November 1999 and August 2002 with the diagnosis of APS were studied. The diagnosis was confirmed with endoscopy. Diagnostic criteria included a large residual gastric volume after overnight fasting, a narrowed pylorus impassable by an 11-mm endoscope and no histological evidence of malignancy. Similar criteria were also used by Trewby *et al.*⁴ All patients were commenced on a twice daily dose of intravenous PPI. This was changed to an oral regimen after 2 days. Main outcome measures evaluated were resolution of symptoms on PPIs and failure of medical treatment.

Results

There were five females and one male. Median age at diagnosis was 72 years (range, 30–90 years). Table 1 shows the presenting features of these patients. Median duration of symptoms was 2 weeks (range, 1–5 weeks). Five patients had a history of peptic ulcer disease. Complete resolution (tolerance to semi-solid diet without vomiting) was achieved in five patients (83%). Median duration to resolution of symptoms was 9 days (range, 5–14 days). All patients were changed to oral PPIs after 2 days. One patient did not respond to oral therapy after 2 weeks of medical treatment (persistent vomiting after food) and required surgical intervention (pyloroplasty). All patients were followed up at 6 weeks, 3 months and then 6-monthly with a median follow-up of 26 months (range, 6–48 months). There was no recurrence of symptoms. Four patients were *Helicobacter pylori* positive and received *H. pylori* eradication therapy. All patients were discharged on a low-dose PPI.

Discussion

The reported incidence of APS complicating duodenal ulcer disease is 7–15%.⁷ However, the overall incidence of this complication is declining in Western countries. This is attributed to the more successful medical treatment of peptic ulcer with the introduction of PPIs. Trewby *et al.*⁴ described 17 patients over a 10-year period treated successfully with PPIs. Our study (six patients in 3 years) supports the finding of Trewby *et al.*⁴

Previously, APS has been considered to be an absolute indication for surgery.¹ The three classical surgical options are: (i) polya gastrectomy; (ii) truncal vagotomy with pyloroplasty; or (iii) bypass in the form of gastroenterostomy. More recently, pyloric dilatation has been considered an alternative treatment option. Johnston *et al.*⁸ were the first to describe the use of Hegar dilators peri-operatively for dilating the pylorus at the time of highly selective vagotomy. It was then established that re-stenosis following dilatation was prevented if acid output was reduced. Endoscopic balloon dilatation of APS has also been shown to be effective treatment in high-risk patients for surgery with good short-term results.¹

The standard criterion for surgery for APS has been failure to respond to medical treatment after 5 days.⁹ In our study, the median time to respond to medical treatment was 9 days (range, 5–14 days). Similar time periods for response to medical treatment has been shown by others.^{3,4} Therefore, we suggest prolonging the trial of medical therapy for up to 2 weeks. Intravenous PPIs have previously been advocated for relief of gastric outlet obstruction. However, we were able to change to oral PPIs after 2 days

Table 1 Presenting features of patients treated for APS

Presenting features	No of patients
Vomiting	5
Abdominal pain	4
Weight loss	2
Haemetemesis	1
H/O peptic ulcer	5
NSAID use	2

of intravenous medication. This suggests that, after gastric aspiration and a short course of intravenous PPIs, the gastric emptying improves sufficiently for orally administered drugs to be effective. Similar results were shown by Trewby *et al.*⁴ It remains to be seen whether sublingual PPI therapy will be equally effective.

Conclusions

The success of medical treatment of APS suggests that the gastric outlet obstruction is predominantly secondary to reversible pyloric oedema and spasm induced by acute ulceration and not as a result of fixed cicatrization of the pyloric canal. These patients should be offered a prolonged trial of PPI prior to submitting to surgical intervention.

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