

Changing Patterns of Elective Surgical Interventions in Peptic Ulcer Disease

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Recent emergence of effective anti ulcer drugs, *Helicobacter pylori* eradication therapy and innovation in endoscopic facilities have limited the role of surgical intervention for non complicated and complicated peptic ulcers. *Helicobacter pylori* therapy has reduced complications and recurrence rates. This study compares changing spectrum of disease in our set up over 20 years in respect to presentation and surgical intervention required. Twenty four patients required elective operations in four years period from 1980 and the number decreased to nine in six years period from 1997. Majority of these patients (93.9%) were male and of 40-50 years age group (51.5%). Gastric outlet obstruction was main problem (66.6%) followed by non healing ulcer (33.3%). The consistently falling rates of presentation and elective operations for acid peptic disease is a good indicator of effective pharmacological treatment.

Key words: Acid peptic disease, elective surgical intervention, drug therapy

In sixteenth century, peptic ulcer disease was established at autopsy. First duodenum ulcer was seen in form of haemorrhage and perforation in eighteenth century¹.

Peptic ulcer disease runs a long course of remissions and relapses. Sometime it presents with acute catastrophe like perforation or haemorrhage with grave consequences. At other times, it progresses slowly with increasing fibrosis and presents with gastric outlet obstruction.

A lot of predisposing and causative factors have been identified including smoking, high fat diet, stress, drugs and certain congenital predisposition. Majority of duodenal ulcers are associated with *Helicobacter pylori* infection². *Helicobacter pylori* is diagnosed by positive urease test, along with identification of organisms on histology. Its eradication improves ulcer healing and reduces ulcer recurrence rate³.

In acid peptic disease, surgical intervention is required for intractable peptic ulcer and complications like haemorrhage, perforation and obstruction. Medical therapy of peptic ulcer disease has improved dramatically during the past 20 years with introduction of modern anti-secretory drugs as well as eradication therapy of *Helicobacter pylori*⁴. Regardless of consistently occurring emergency surgery, elective surgery from peptic ulcer disease is hardly ever required today.

Elective surgical intervention is done in form of antisecretory and drainage procedure like vagotomy, antrectomy, gastrojejunostomy, Billroth I & II procedures⁵. The aim of these operations is to reduce acid secretion to such levels that ulcer will heal⁶. Gastric resections reduce size of parietal cell mass and remove antrum, the source of gastric phase of secretion. Vagal denervation abolishes cephalic phase of secretion and reduce sensitivity of parietal cells to secretory stimuli. This study is carried out to evaluate changing patterns of disease in our set up.

Material and methods

This study was conducted in West Surgical Unit of Mayo Hospital, Lahore. Patients presenting in outdoor or emergency with gastric outlet obstruction or non healing chronic peptic ulcer were included in the study. Patient selection was on random pattern. The study is a comparison of two time periods from 1980-84 and 1997-2004. Patients admitted were evaluated thoroughly clinically and investigated by esophagogastroduodenoscopy and barium meal. Patients built haemodynamically and fluid electrolyte balance maintained. Nasogastric decompression and stomach lavage done. Surgical intervention undertaken in hands of consultants. Patients were followed postoperatively for any complication and recurrence.

Results

This study consist of two groups of patient, Group A from 1980-84 and Group B from 1997-2004. In group A 24 patients were operated while in group B 9 cases underwent laparotomy.

Table 1. Number of patients (n=33)

Period	Group	Number
1980-84	A	24
1997-2004	B	09

All patients in group A were male while in group B 2 out of 9 patients were female.

Table 2. Gender distribution of patients.

Group	Male	Female
A	24	0
B	07	02

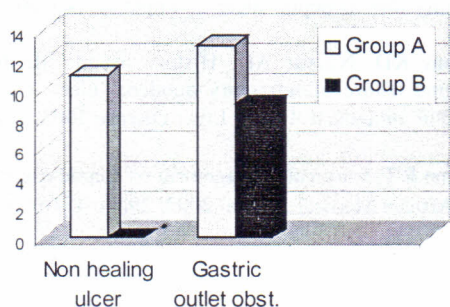
Mean age is 47.5 years, ranging from 32-63 years.

Table 3. Age distribution

Age	30-40 Years	41-50 years	>51 Years
A	8 (33.3%)	13(54.1%)	3(12.5%)
B	1(11.1%)	4(44.4%)	4(44.4%)

In group A, eleven cases were of non-healing ulcers while thirteen were of pyloric stenosis. In group B all cases were of gastric outlet obstruction.

Fig. 1 Aetiology



In group A, 4 patients were being operated for second time, after once operated for duodenal ulcer perforation, while all patients in group B were being primarily operated.

There was no record of *Helicobacter pylori* eradication therapy in first group, while 4 patients in group B had failed medical therapy and developed outlet obstruction. All these patients were given eradication therapy postoperatively.

Surgical intervention was done in form of Billroth I, II, pyloroplasty, gastrojejunostomy and truncal vagotomy etc.

Table 3.Surgical intervention

Operations	Group A	Group B
Truncal vagotomy & Billroth I	04	02
Truncal vagotomy & Biollroth II	09	03
Truncal vagotomy & pyloroplasty	07	02
Truncal vagotomy & gastrojejunostomy	02	02
Gastrojejunostomy	02	00

In three years follow up, all patients remained symptom free.

Discussion

Acid peptic disease has affected humanity for long. It affects quality of life and causes acute surgical

catastrophies like perforation and haemorrhage, alongwith chronic menace of gastric outlet obstruction.

In our study age distribution signifies decrease in rate of surgical intervention in age group below 50 years, best guide of success of drug therapy. There is increase in age group above 50 due to prolonged history and failure or poor compliance of drug therapy.

The sex distribution showed a male predominance in our study with male to female ratio of 15.5:1, which is mainly due to stressful life style and smoking. Increase use of NSAIDs, steroids and hormones in elderly females is a reason of higher frequency in Western world e.g., upto 1.7:1 in other studies⁷.

Over the passing decades this disease has changed its spectrum considerably because of newly emerging drug therapies and availability of endoscopic facilities⁸. Diagnosis of *Helicobacter pylori* as the main causative agent has revolutionized the management protocols and decreased considerably the surgical interventions for non-healing ulcer⁹. In our study admission for chronic sequelae of acid peptic disease were 24 in four years (Group A) that decreased to 9 in six years (Group B). This trend is seen also in other studies¹⁰. Elective surgical operation for peptic ulcer disease has also shown dramatic falls in number worldwide⁴.

During initial period of our study, 11(45.8%) patients underwent surgery due to non healing ulcer. This number dropped to zero in later period of our study because of medical therapy. Gastric outlet obstruction was main indication in both groups, 13(54.1%) patients in group A and 9(100%) in group B. No patient was operated for non healing ulcer.

In one study, the operations of upper G.I. declined by 80% over 5 years for 1994-99¹¹. The reduction was most marked for patients with intractability. Frequency of refractory duodenal ulcers i.e., not healed after 3 months treatment has decreased dramatically preceding newer more powerful treatment with a proton pump inhibitors and *Helicobacter pylori* eradication¹¹. This can be put as a modern example of a spontaneous change in natural history of the disease. Simultaneously, the prevalence of operations for bleeding, obstruction and perforation also decreased.

There is still some interest in elective surgical management in few patients with uncomplicated disease possibly due to poor compliance of drug therapy, resistant ulcers and cost of drugs where relatively economical laparoscopic ulcers surgery is emerging in many centers⁶.

Peptic ulcer complications rate¹² for duodenal ulcer to gastric ulcer was 11.5:1. Perforation is commonest (56.6%), followed by gastric outlet obstruction (34.6%), in a study between 1990 and 1999 in England¹⁰ number of prescriptions for H₂ receptor antagonists remained constant but those for proton pump inhibitors increased by 5000%. This has lead to decrease in overall surgical complications. Simultaneously, there is increase in use of aspirin by 460%

and NSAIDs by 13%. This very well correlates with persistence even increase in rate of ulcer perforation and haemorrhage especially in females and elderly men.

Increasing use of medical therapy in uncomplicated peptic ulcer disease has decreased the morbidity and reduced late surgical complications. Helicobacter pylori recognition and its eradication has emerged as main stay in the management of duodenal ulcer. Endoscopic and laparoscopic modalities have helped decrease elective surgical intervention. Thus treatment of uncomplicated duodenal ulcer has gone nearly exclusively into internist's hands⁴.

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