

SURGICAL TREATMENT OF PEPTIC ULCER*

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Introduction

In spite of numerous experiments carried on animals and human beings, the problem of peptic ulcer is still full of mystery. In the words of Ogilvie "the problem of peptic ulcer has been buried in the mass of papers that have descended on it and covered it. But we have not solved the problem of peptic ulceration." The ulcer developing in the area of acid pepsin digestion is caused probably by the loss of equilibrium between the acid pepsin versus mucosal resistance. Much has been talked about Cushing's neurogenic theory, Boyd's infection theory and Hurst's ulcer diathesis. Dietetic deficiency, irregularity in the dietary habits, smoking and the stress and strains of modern life have been blamed as causing the ulcer.

There has been much controversy in the past about the treatment of peptic ulcer. Sir Arthur Hurst advocated a medical regime for all cases. Meulengracht suggested a medical regime even for cases of massive haemorrhage. There were supporters of surgical treatment for all ulcers the moment they were diagnosed. Today physicians and surgeons have come to an agreement. A fair trial of medical treatment is given before advising surgery for the patient. Surgical treatment is indicated in cases which are tired of medical treatment and in cases presenting with complications.

Numerous surgical procedures have been devised to cure the ulcer. But only partial gastrectomy and vagotomy combined with a drainage procedure have stood the test of time. Recently, there has been controversy amongst the gastric surgeons about which of these procedures is better.

Total Peptic Ulcer Cases in Surgical Wards

During the last 8 years 551 cases of peptic ulcer were admitted in the surgical wards of HMG Hospitals in Kathmandu. A glance at the annual admission rate will show that it is one of the common conditions coming for treatment. Please note that the admission rate is increasing every year.

Annual, Admission Rate

| Year B.S. | 2017 | 018 | 019 | 020 | 021 | 022 | 023 | 024 | 025 (upto Poosh) | Total |
|-----------|------|-----|-----|-----|-----|-----|-----|-----|------------------|-------|
| Male | 18 | 34 | 36 | 40 | 42 | 54 | 62 | 71 | 57 | 414 |
| Female | 8 | 16 | 12 | 11 | 14 | 20 | 22 | 15 | 19 | 137 |

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Type of Ulcer and Complication

| | |
|--|------------------|
| Chronic Duodenal ulcer including all cases of Pyloric Stenosis | 382 |
| Chronic gastric ulcer | 97 |
| Perforated Peptic ulcer | 42 |
| Haematemesis and Melaena due to Peptic ulcer | 24 |
| Recurrent ulcers | 6 |
| Total | 551 cases |

Duration of Symptoms

| | |
|------------------------|------------------|
| More than 10 years | 172 |
| Between 5 and 10 years | 232 |
| Less than 5 years | 147 |
| Total | 551 cases |

66 Cases did not have any operation, of which 12 died in hospital. The reasons for not being operated were: did not consent for operation, left against medical advice, were not fit for operation, or were discharged after medical treatment.

This leaves a total of 485 cases who underwent surgical procedures as follows:-

| | |
|--|----------|
| 1. Gastrojejunostomy alone | 71 cases |
| 2. Vagotomy with drainage, usually a gastrojejunostomy | 212 |
| 3. Partial gastrectomy | 158 |
| 4. Sleeve resection of stomach | 9 |
| 5. Perforated P. U. with: | |
| Simple closure of perforation | 17 |
| Closure of perforation and vagotomy-gastrojejunostomy | 18 |

Operative Mortality

There were 30 deaths out of 485 cases operated, giving a figure of 6.2%. Clinical diagnoses of the post operative complications causing deaths were as follows:-

| | |
|---|---------|
| Duodenal blow out | 8 cases |
| Generalised Peritonitis | 5 |
| Paralytic ileus and fluid and electrolyte imbalance | 4 |
| Chest Complications | 4 |
| Pulmonary embolism after deep venous thrombosis | 3 |
| Cause unknown | 6 |

Duodenal blow out has been the most dreadful complication of partial gastrectomy. In my six cases who developed it died within four to five days of the onset. Deaths due to peritonitis, paralytic ileus and some deaths due to chest infections have been in cases of perforated peptic ulcer and ulcers which had partial gastrectomy carried out—these complications were practically absent in those with vagotomy and drainage.

Operation wise, the mortality has been as follows:-

| | Death | % |
|--|-------|------|
| of 71 cases of gastrojejunostomy alone | 4 | 5.6 |
| of 212 cases of vagotomy with dainage | 4 | 1.9 |
| of 158 cases of partial gastrectomy | 12 | 7.6 |
| of 9 cases of "sleeve resection" | 1 | 11 |
| of 17 cases of simple closure of perforation | 6 | 35 |
| of 18 cases of vagotomy with drainage after closure of perforated D.U. | 3 | 16.6 |

With our increasing experience in surgery and improvements in ancillary facilities, the mortality rate has come down eg. in the last two years the mortality of vagotomy and gastrojejunostomy has been practically nil.

Of the 17 cases of perforation who had simple closure, 15 were D. U. and 2 were gastric ulcers. Of the partial gastrectomy, 4 were emergency operations of perforated gastric ulcers.

Of the 24 cases of haematemesis and melaena admitted into our hospitals in the last 8 years, eight cases were treated by the author :- 4 had duodenal ulcer, 3 had gastric ulcer and in the remaining one case the site of bleeding could not be detected hence partial gastrectomy was performed. Partial gastrectomy was done for the three gastric ulcers. In 3 cases of duodenal ulcer the bleeding point was under-run and vagotomy with gastrojejunostomy was performed. The remaining one case was of known duodenal ulcer who succumbed to blood loss inspite of transfusion of 13 pints of blood in 6 hours.

In high gastric ulcers "sleeve resection" of the ulcer bearing part of the stomach with a gastro-gastrostomy was performed. Usual method of partial gastrectomy was removal of about 2/3rd stomach with ante-colic iso-peristaltic gastrojejunostomy with a Hoffmeister-Finisterer valve formation.

Vagotomy was total, performed through a supra-umbilical midline incision. Gastrojejunostomy is the routine drainage procedure, but recently in a few cases pyloroplasty has been performed which of course cannot be carried out in badly scarred duodenum. In eleven of those cases where vagotomy was planned, it could not be carried out and either gastrojejunostomy alone or a partial gastrectomy had to be carried out instead. The reasons for inability to perform vagotomy have been given in the notes as follows:

| | |
|---------------------------------------|---------|
| Adhesions due to previous laparotomy | 4 cases |
| Gross Hepatosplenomegaly | 3 cases |
| Obesity | 2 cases |
| Absence of good relaxation of muscles | 2 cases |

Six cases were admitted with recurrent ulcers-the original operation was gastrojejunostomy alone in four, vagotomy and drainage in two. Partial gastrectomy was performed in them. One patient (G.D.) needed two laparotomies subsequently, with no relief. A thorough search was made for pancreatic tumour but was unsuccessful. Another patient (T.B.) died in the Military Hospital with protracted illness.

Cases of pyloric stenosis have been grouped with chronic duodenal ulcer because the presence of stenosis does not change the line of treatment except that the operation is to be postponed for a few days to bring the fluid and electrolytes to the normal level but it is difficult to improve the nutritional state of these patients before operation. The author routinely drains the peritoneal cavity of perforated peptic ulcer cases after operation.

Vagotomy With Drainage versus Partial Gastrectomy for Chronic Duodenal Ulcer

We have great difficulty in following up the cases because of the following reasons:

- a) Cases came from all over the country and transport and postal facilities in Nepal are limited.
- b) The general masses are illiterate and cannot answer questionnaires.

Hence, only a gross comparison has been made on the basis of our experience, of the operation, during the post operative periods and consultations later by some patients, specially those in the Kathmandu Valley. Frankly speaking it is also too early to compare our results with surgical procedures for peptic ulcers.

Cases of duodenal ulcers treated by partial gastrectomy complain that their appetite has been reduced to less than half. We will agree that the routine frequent small bland feeds of western countries are impossible in our socio-economic environment. We are used to taking a 'mana' of rice, maize or millets twice a day, which is not compatible with a small gastric stump. Naturally they develop malnutrition and anaemia.

Some of the partial gastrectomy patients develop severe post prandial symptoms which force them to lie down after meals. This is difficult for our office going population who must leave their homes at 9 A.M. with a full stomach.

Partial gastrectomy is contraindicated in D.U. patients with pulmonary tuberculosis. Chances of pulmonary tuberculosis increase after this operation. Six of my partial gastrectomy patients have developed frank pulmonary tuberculosis. The other delayed complication which partial gastrectomy produces is regurgitation.

I agree that the number of cases of recurrent ulcer after vagotomy with drainage will increase as the years pass. However, vagotomy with drainage has definite advantages over partial gastrectomy. Time taken for the operation is less than an hour. Appetite improves and invariably they gain weight after vagotomy with drainage.

Another delayed complication, after vagotomy and gastrojejunostomy, is diarrhoea. I have not come across a single case of intractable post-vagotomy diarrhoea. The diarrhoea responds to advice to avoid fatty foods and take enzyme supplements for a few months post operation. In a few months time their system starts functioning normally and the extra enzyme could be withdrawn. This treatment with oral enzyme supplements has been very rewarding.

Recently a few cases had acid eructations post-operative after vagotomy-gastrojejunostomy. Simple advice to them to avoid irritating foods has been very useful.