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Original Article

NON-OPERATIVE MANAGEMENT OF PERFORATED PEPTIC ULCER

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ABSTRACT:

Objective: The aim of this study was to see the morbidity and mortality in peptic ulcer perforation cases by non-operative management in selected cases.

Design: The cases were selected on the basis of structured protocol.

Setting: This study was carried out in the Department of Surgery of Khulna Medical College Hospital located in southern Bangladesh over a period of 10 years.

Subjects: The patients were diagnosed as perforated peptic ulcer clinically and radiologically. All patients in this series had pneumoperitoneum in plain x-ray abdomen. They included 54 patients of peptic ulcer perforation cases had the following parameters: early presentation (<12 hours), soft abdomen with minimum tenderness and relatively younger patients. All patients were chosen who were haemodynamically stable. Ultrasonography was done in doubtful cases and also to see the amount of free fluid inside the abdominal cavity.

Methodology: After diagnosis, all patients were managed in a similar fashion-like nil by mouth, continuous gastric aspiration, application of intravenous fluids and antibiotics and antiulcer therapy.

RESULTS: In the selected 54 patients, male: female were 49:05. Nine had history of NSAID intake. There was no mortality. Morbidity analysis showed that three had hepatic abscess, four had pelvic abscess, six took prolonged time for improvement, in two cases conservative treatment had to be abandoned and laparotomy was done in the same hospital admission.

Conclusion: Non-operative procedure is a safe and effective measure for the management of perforated peptic ulcer in selected cases.

KEY WORDS: Perforated Peptic Ulcer, non-operative management.

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INTRODUCTION

With the introduction of H_2 receptor antagonist in 1976 there is a significant reduction of elective surgical cases carried out for duodenal and gastric ulcers[1]. However the incidence of complications associated with peptic ulcer disease particularly perforation has not changed appreciably[2]. The management of perforated peptic ulcer is still a debatable issue to the surgeons. According to many authors the standard treatment for patients with perforated peptic ulcer in most hospitals has long been urgent repair of the perforation[3]. Nearly 50 years ago Taylor[4] established an argument for a non-surgical approach to perforated

duodenal ulcer reporting a mortality of 11 percent. In other series it was 10 and 11.5 percent respectively[5,6]. The reported mortality rate for surgical treatment at that time reached up to 20 percent[3]. Even after many developments in surgical sciences mortality still prevails in high frequency in different series[7,8]. Morbidity also counts in emergency surgery. The overall morbidity was 50-70%[7]. Though current treatment of perforated peptic ulcer still largely remains surgical, there is considerable postoperative morbidity which may concern two third of the patients. In another report, 30% patients suffer from pneumonia, 10-15% wound abcess[9]. It is known that ulcers frequently heal spontaneously by the adherence of omentum or adjacent structures. The early cases before contamination generally do not keep any residue. Keeping this in mind, we decided to manage these cases of early perforation, healthy patients, and acute ulcer cases by non-surgical methods in a structured protocol in our unit of the department of surgery of Khulna Medical College Hospital-located in southern part of Bangladesh by antibiotics, antiulcer therapy and gastric aspiration.

PATIENTS AND METHODS

The patients in this study had perforated peptic ulcers treated non-operatively between July 1992 to August 2002. The protocol for management for peptic ulcer diseases has been developed in our previous experiences in our department. The patient with a history of abdominal pain suggesting peptic ulcer disease or a history of taking antacids or H_2 blocker agents greater than three months were considered as chronic ulcer disease.

Inclusion Criteria:

The included patients had the following criteria:

- history of the symptoms <12 hour
- lessening of abdominal pain
- softening of the abdomen and free movement of the abdomen during respiration.

All patients were haemodynamically stable on admission. We gave preferences to the younger patients. Key aspect of this method of non-operative management was continuous gastric aspiration by nasogastric tube, regular assessment of the patient in every 2-4 hours by examination of pulse, blood pressure, state of hydration, urine output, and abdominal condition. Therapy with IV fluids, antibiotics like amoxicillin+metronidazole, amoxicillin+gentamycin + metronidazole were practiced, H_2 blockers were applied. Clinical resolution was evident by soft and minimal tender abdomen, presence of bowel sound and lessening of fever. If evidences of peritonitis progressed or in first 24 hours no sign of regression were seen, the patients were referred for surgery. If evidences of peritonitis progressed or in first 24 hours no sign of regression was seen, surgery was performed. Nasogastric tube was withdrawn when the patient improved satisfactorily, abdomen became soft, tenderness was minimum or absent bowel sound appeared. It took 3-5 days to give the patient oral food. Feeding was slow initially with liquids followed by semi-solid to solid food given gradually.

RESULTS

Fifty four of the 471 cases were included in this study within this 10 year period. There were 49 male and 5 female age ranging from 16 to 65 years mean was 36.5 years (Table-I). Each patient had the clinical evidence of mild degree of peritonitis on physical examination and pneumoperitoneum on erect chest or abdominal X-ray. Nine had the history of taking non-steroidal anti-inflammatory drugs; five gave no previous history of peptic ulcer symptoms. All patients could be managed by non-operative measures except two who were offered surgical treatment - they showed signs of gradual abdominal distension and progressive fluid accumulation for which laparotomy and closure of the perforation solved their problems.

Complications:

Three patients took longer time (seven days) for satisfactory improvement, two developed subphrenic abscess (Table-II), three had pelvic abscess evidenced by diarrhoea and ultrasonographical examination. Three patients had fever and two developed chest infection. All these could be managed in the same hospital-admission. Two (3.7%) patients came within six weeks with recurrent epigastric pain, whom we offered definitive surgery – i.e. truncal vagotomy and gastrojejunostomy.

Table-I: Patient profiles (n=54)

Age (in year) :	16-65 (mean-36.5)
Sex –male: female:	49:05
History of chronic peptic ulcer disease-	45
History of NSAID intake -	09
No previous history of PUD -	05
Abdominal tenderness -	54
Pneumoperitoneum -	54

NSAID – Non Steroidal Anti Inflammatory Drugs
PUD - Peptic Ulcer Disease

Table-II: Complications following the non-operative treatment

Subphrenic abscess -	02
Pelvic abscess -	03
Recurrent pain abdomen -	02
Pneumonia -	02
Slow improvement -	03

DISCUSSION

There is an ongoing debate that whether perforated peptic ulcers should be treated surgically or non surgically. Though surgeons still prefer surgical methods considering the morbidities and diagnostic dilemmas of the non operative methods. It has been estimated that half of the perforations seal by themselves[10] and a prospective trial comparing conservative treatment with surgical treatment in perforated peptic ulcer disease has shown no advantage of surgical treatment with regard to morbidity and mortality[3]. In cases when the patient is haemodynamically stable and has little discomfort, conservative treatment can be tried under strict clinical surveillance of a senior surgeon[9]. It has been established that with nasogastric decompression, substitution of fluids and electrolytes, a proton pump inhibitor and antibiotic treatment, the patient should improve within 12 hour[3,11]. In most of these cases the leakage proven by air under the diaphragm, has already been sealed and surgery remains unnecessary. If abdominal tenderness increases, the patient becomes haemodynamically unstable or there is proof of leakage by contrast x-ray, laparotomy is indicated to irrigate the abdomen and close the leakage[10,11]. The concept of non operative treatment is very old. In 1935 Wangenseteen advised against operation in seriously ill people whose admission to hospital had been delayed. For such cases he recommended continuous gastric drainage to promote or support natural closure of the perforation. This has helped save many patients. From time to time at emergency operation, it has been observed that perforation has been sealed by fibrinous adhesion to the liver or omentum, from there a loose term "leaking perforation" has been kept in literature to include a group of cases in which leakage has in fact ceased. Sometimes in routine operations on ulcers, upper abdominal adhesions have given the evidence that a past perforation was healed without recognition[4]. Thus it has been recognized that a perforation may close spontaneously. The intensity of the

pathological process therefore ranges widely; at one end of the scale is the small duodenal perforation in a healthy person with an empty stomach and good protective rigidity while at the other end is the large gastric perforation in an elderly female or flabby alcoholic with a full stomach and a poor abdominal wall. Nevertheless, in most cases the time factor is the most important consideration. Though gastric aspiration is useful, objective is different in early and late cases. In an early case aspiration is employed to promote prompt sealing of the perforation, but in late cases the idea is to prevent reinfection of the peritoneal cavity whether the perforation seals or not. The question of peritoneal soilage may bring a debate, but it is seen that nasogastric suction, antibiotic therapy and suppression of gastric acid secretion by H_2 blockers can prevent this[12]. Over the last decade a number of advances in the management of perforated peptic ulceration have been reported in the literature that suggest the morbidity and mortality and cost of the disease might be reduced. These include preoperative stratification of the risk factors, laparoscopic treatment and a greater role of non-operative treatment[13].

Our results using non-operative treatment were satisfactory. Fifty-two of the fifty-four patients over the period of ten years were successfully treated. Complications occurred in 11(18.5%) of the patients, mortality was nil. These results were achieved due to strict selection of the patients and regular reassessment which is comparable to other series also[3,12] In our previous series in Dhaka Medical College Hospital post surgical morbidities like wound infection, chest infection was 17.6%[14] which prompted us to look for a non operative measures. In two (3.7%) cases conservative treatment failed, it was quickly abandoned and operation performed. Nasogastric suction is the vital element in non-operative treatment, keeping the stomach empty, allowing natural sealing of the perforation to take place. Careful positioning of the tube and regular aspiration are also important[15].

With the provision of strict criteria, non- operative management of perforated peptic ulcer carries no excess mortality and morbidity[16, 17]. The duration of hospital stay is also decreased. The worry of wrong diagnosis is reduced to a minimum. The treatment instituted is standard resuscitation[18]. If the patients fails to respond, surgery can be done immediately and it is evident that this method is a safe method of treatment in selected patients[11].

So, though the non-operative treatment did not get much popularity and there remains lot of controversies, it is a safe and effective method of treatment in selected peptic ulcer perforation patients.

CONCLUSION

The results of our study shows that strict selection and careful monitoring of the cases during the non operative treatment of perforated peptic ulcer perforation, patients can be well managed under the guidance of a senior surgeon without significant morbidity and mortality. If we consider total hospital stay, treatment cost, surgical risk and patient compliance non-operative treatment is a safe and effective method for the treatment of perforated peptic ulcer patients particularly in the healthy younger ones who presents early in the hospital.

REFERENCES

1. Fineberg HV, Pearlman L.A. Surgical treatment of peptic ulcer in United States. Lancet 1981, 1:1305-1307.
2. Christensen A, Bousefield R, Christiansen J. Incidence of perforated and bleeding peptic ulcers before and after the introduction of H_2 receptor antagonist. Ann Surg 1988, 207: 46.
3. Crofts TJ., Kenneth GMP, Robert JCS, Sydney SCC, Arthur KCL, A randomized trial of non operative treatment for perforated peptic ulcer. N Eng J Med 1989; 320: 970-73.
4. Taylor H. Aspiration treatment of perforated duodenal ulcers. Lancet 1951, 1:7-12.
5. Ball ABS, Thomas PA, Evans SJ, Operative mortality after perforated peptic ulcer. Br J Surg 1989, 76: 521-22.
6. Bodner B, Harrington ME, Kim I. Multifactorial analysis of mortality and morbidity in perforated peptic ulcer disease. Surg Gynaecol Obstet 1990, 171:315-21.

7. Barry MC, Gul Y, Davies MG, Long D, Shine MF, Lennon F. Changing trends in acute peptic ulcer surgery in a district surgical unit. Ir J Med Sci 1996, 165:109-12.
8. Irvin TT, Mortality and perforated and peptic ulcer: a case for risk stratification in elderly patients.Br J Surg 1989, 76:215-18.
9. Zittel TT, Jehle EC, Becker HD, Surgical management of peptic ulcer disease today- indication, technique and outcome. Langenbeck's Arch Surg 2000; 385: 84-96.
10. Donovan AJ, Berne TV, Donovan JA. Perforated duodenal ulcer. An alternative therapeutic plan. Arch Surg 1998; 133:1166-71.
11. Marshal C, Ramaswamy P, Bergin FG, Rosenberg IL , Leaper DJ. Evaluation of a protocol for the non-operative management of perforated peptic ulcer. Br J Surg 1999, 86:131-34.
12. Berne TV, Arthur AJ. Non operative treatment of perforated duodenal ulcer. Arch Surg 1989;124: 830-32.
13. Windsor JA. The management of perforated duodenal ulcer. N Z Med J 1995; 108: 994-95.
14. Rahman MM, Hossain MS. Gastroduodenal perforation of peptic ulcer: review of pattern of surgical procedures in 479 cases. Bang Med J(Khulna) 1995; 28:15-18.
15. Keane TE, Dillon B, Afdhal NH, McCormack CJ. Conservative management of perforated duodenal ulcer. Br J Surg 1988; 75: 583-84.
16. Gul A , Shine MF, Lennon F. Non-operative management of perforated duodenal ulcer. Ir J Med Sci 1999;168:254-56.
17. Jamieson JJ. Should we be changing our operative strategies for the acute complications of peptic ulcer disease? Aust N Z J Surg 1988; 58: 525-27.
18. Rigg KM , Stuart RC, Rosenberg IL, Conservative management of perforated peptic ulcer. Lancet 1990; 335: 673.