



Management of Peptic Ulcer Perforation is there A Role for Conservative Management? A Research Study at a Tertiary Care Center in North East India

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Abstract

Background – Conservative treatment of perforated peptic ulcer has documented good results in carefully selected patients with fair general condition. The aim of this study is to determine whether surgery could be avoided in some selected patients with peptic ulcer perforation.

Material and Methods – during the period July 2002-Nov 2012, 68 patients who were treated conservatively forms the study population. Conservative treatment consists of nasogastric aspiration, keeping patient nil per orally, administration of IV antibiotics, fluid supplements, proton pump inhibitor and close monitoring of vital signs and abdominal girth.

Endpoints – Duration of hospital stay

Results –Most of the patients in our study were in age group of 40-70 years (63.24%) with male: female ratio of 38:5. We also noticed that 50 % of patients came to the hospital within 24 hours of onset of symptoms. Median hospital stay was 8.48 days. We had no mortality during our study or follow up period.

Conclusion – Conservative management of peptic ulcer perforation is a safe procedure in selected cases particularly in medically unfit patients for surgery but care should be taken for the possibility of laparotomy anytime.

Key Words – Peptic ulcer, Peptic ulcer perforation, Surgical repair, Conservative management.

Introduction

Despite of dramatic improvements in peptic ulcer management in the last two decades (Proton Pump Inhibitors as well as Helicobacter pylori Eradication) the frequency of emergency surgery for perforated peptic ulcer has remained stable or even increased ^[1,2]. This may be due to an

increase in use of Non-steroidal anti-inflammatory drugs and lifestyle changes such as smoking and alcohol consumption ^[3,4].

Urgent surgical exploration is the standard of care for perforated peptic ulcer while the results of surgery are excellent in subjects with good general condition; these procedures are still associated

with high mortality in elderly patients, with reported rates upto 8% to 41% [5-8].

Current treatment of perforated peptic ulcer still remains mainly surgical. However, non-operative treatment has been shown to be safe and effective in selected patients [9]. It is known that perforated ulcers frequently seal spontaneously by the adherence of the omentum of organs adjacent to the ulcer and operation can be avoided in selected patients [10].

Conservative treatment, originally proposed by Wangenstein, was recommended as the treatment of choice in perforated acute peptic ulcer by Taylor in 1956 [11]. Today it is reserved for patients considered medically unfit for surgery or where immediate surgery is not available.

Aim of the study

To determine whether surgery could be avoided in some selected patients with peptic ulcer perforation.

Materials and Methods

Materials

A prospective study was undertaken during period of July 2002 to Nov 2012. Out of 1210 patients with peptic ulcer perforation admitted to the department of Surgery, RIMS, Imphal during the study period, 68 patients were selected based on selection criteria.

Selection Criteria

68 Patients with perforated peptic ulcer were selected for the study who were hemodynamically stable, absence of generalized peritonitis, absence of distension of abdomen and patients unfit to undergo surgery under general anaesthesia.

Exclusion Criteria

Presence of fever as it indicates septicemia and typhoid test (typhi Dot) positive patients as they have high chances of ileal perforation.

Diagnosis

The peptic ulcer perforation was diagnosed mainly by careful history, clinical examination

and free gas under diaphragm seen in erect X-ray abdomen and chest X ray PA view.

Methods

Detailed history of duration of symptoms, clinical examination, and radiological study were done in all cases. Routine investigations including – Blood RE, Blood Sugar (random), KFT, Sr. Electrolytes, ECG, X-Ray chest and Erect abdomen. Morbidity and Mortality during hospital stay was recorded.

Conservative treatment includes nasogastric aspiration using 18 Fr Ryle's Tube, nil by mouth, intravenous fluid, antibiotics, proton pump inhibitors, appropriate sedation with analgesia and careful observation of vital signs including blood pressure, pulse, temperature every one hourly. Abdominal girth was measured every one hourly around umbilicus. Patients and their relatives were explained about possibility of exploratory laparotomy any time if abdominal girth increases or peritonitis develops for which informed consent was already taken. Patients follow up was done and any complication was recorded.

Results

Study Population

During study period of (2002-2012) 68 patients with peptic ulcer perforation were treated conservatively. The mean age of patient in our study was 46 years (range 21-85).

Table 1 – Age and Sex distribution

Age Group	Sex(M:F)	Total	Percentage
< 40 years	21:0	21	30.89
40-70 years	38:5	43	63.24
>70 years	3:1	4	05.89
Total	62:6	68	100

The above table shows age and sex distribution of study population. Most of the patients were in age group of 40-70 years (63.24%) with male:female ratio of 38:5. 21(30.89%) patients were in age group less than 40 years all of them were males whereas only 4(05.89%) patients were of age more than 70 years with male:female ratio of 3:1.

Clinical Presentation

Table 2 – ClinicalPresentation

Clinical Presentation	No. of cases	Percentage
Pain in abdomen	68	100
Vomiting	20	29.42
Obliterated liver dullness	39	57.36

All the patients in our study presented with complain of pain in abdomen. 20(29.42%) patients had vomiting and 39 (57.36%) patients had obliteration of liver dullness.

Duration of Presentation

Table 3 – Duration of Presentation

Duration	No. of cases	Percentage
< 24 hrs	34	50
24-72 hrs	28	41.12
>72 hrs	6	8.83
Total	68	100

34(50%) out of 68 patients came to the hospital within 24 hours of onset of symptoms. Another 28(41.12%) patients came within 24-72 hours from the start of pain. A small fraction of patients 6(8.83%) came after 72 hours of onset of symptoms.

Predisposing Factors

Most of the patients who had perforation were having previous history of peptic ulcer disease or who were taking analgesics for pain and fever injudiciously. There were 19 patients who took analgesics before development of perforation while there were 22 patients who had history of peptic ulcer disease. Only 3 patients in our study gave history of peptic ulcer disease as well as taking analgesics. 24 out of 68 patients in our study had no history of previous peptic ulcer or analgesic intake.

Duration of Hospital Stay

Table 4 – Duration of Hospital Stay

Duration	No. of cases	Percentage
< 7 days	17	25
7-14 days	43	63.24
>14 days	8	11.77
Total	68	100

The mean duration of hospital stay was 8.48 days (range 3-25) in our study. 17(25%) patients out of 68 stayed less than 7 days whereas maximum that

is 43(63.24%) patients stayed for 7-14 days in hospital. A small number of patients 8(11.77%) stayed for more than 14 days in hospital.

Among the conservatively treated patients we came across 4 cases who needed to be operated because 3 of them had increase in abdominal girth by 3 cm within 12 hours of admission to hospital and 1 patient later on found to have ileal perforation following typhoid infection.

The mean expenditure for patients in our study was Rs 5200/- ranging from Rs 4797/- to Rs 5650/- whereas the mean expenditure for the patients who were treated with surgical repair for peptic ulcer in same institute was RS 7800/- ranging from Rs 6250/- to Rs 8890/- .

Follow up

After discharge from hospital all patients in study were asked to attend surgery OPD every 2 weeks for a period of 2 months. Follow up patients were investigated with Upper GI Endoscopy. Most of patients showed endoscopic evidence of healing of ulcer with slough. None of the patients attending OPD in follow up period develop complication such as intraperitoneal abscess or peritonitis.

Discussion

In our study we tried the safety of conservative treatment also known as the Taylor method of perforated peptic ulcer. Our results show that in the era of PPI this approach can be applied in patients with acceptable morbidity and no mortality. Study of the natural history of peptic ulcer perforation has shown that, after perforation occurs, it is promptly sealed by adjacent organs. A fibrin clot appears quickly on and around the perforation. This is the initiation of definitive closure of perforation with the help of adhesions between perforated ulcer and adjacent organs [12-15].

According to Donovan, this process of self-healing is sufficient in 50% of patients [16]. It is a not uncommon experience for surgeons operating on perforated peptic ulcer to find that they first

have to mobilize the perforation from adjacent organs or re-perforate the already sealed perforation before being able to repair it.

Usually, in the peptic ulcer perforation the peritoneal cavity remains sterile for 12 hours, because of less bacterial load in the upper gastrointestinal tract. However, some patients develop peritonitis due to continuous fluid extravasation, higher bacterial load of the upper gastrointestinal tract and impaired spontaneous sealing of the perforation. These observations were the basis for the development of conservative treatment.

The morbidity and mortality associated with surgical repair of perforated peptic ulcer are currently in the range of 3–9% whereas the result of very few series available for conservative treatment shows mortality rates as 5.2%. In Taylor's initial series in 1957 for conservative treatment for perforated peptic ulcer which was a randomized control trial had mortality rates of 0% and more recent publications have reported morbidity rate up to 8% [17-21]. In our study, we had no mortality during hospital stay and follow up period.

Irvin identified risk factors which included age over 70 years, use of steroidal or nonsteroidal anti-inflammatory drug, and concomitant medical illness. The presence of shock (systolic B.P. less than 100 mm. Hg.) and delay in treatment, combined with these factors, could be used to predict post-operative death with 87% accuracy. With age over 70, the mortality rate rose to 34% whereas it was less than 14% in those under 70 [22]. Ball et al also confirmed the risk of age, with a mortality rate of 47% in those over 70s, and shock with mortality rate of 100% [23]. In our series we had only 3 patients with age more than 70 years and none of them had any mortality during hospital stay or follow up period.

The wide variation in the time delay between perforation and treatment is also believed to be important. In the Hong Kong Series, median time duration in the non-operative group was 10.5 hours. In the Exeter series, 33% of those over 70s

had perforation for longer than 24 hours. Conservative treatment is not advised with a history longer than 12 hours [24]. In our study 50% of the patients presented within first 24 hours and another 41% of patients presented within 24-72 hours of onset of symptoms.

Though there has also been concern about the ulcer re-leaking, this has been a very unusual occurrence. In the studies reported by Berne and Rosoff, this occurred in only 2 of 109 patients treated non-operatively [25]. Donovan et al [16] reported no re-leaks, and there were no re-leaks in the patients in our series.

Conclusion

Non operative management of peptic ulcer perforation is a safe procedure in selected cases in initial period but care should be taken for the possibility of laparotomy anytime. Particularly conservative treatment can be considered when there is great risk associated with surgery. Conservative treatment of perforated ulcer is, in the PPI era, a valid therapeutic option in patients not eligible for surgical repair due to poor medical condition.

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