



## Original Article

# Outcome of Non-operative Management of Perforated Peptic Ulcer Disease

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### ABSTRACT

**Background:** Peptic ulcer perforation management is still an enigma. Though the overall incidence has been reduced worldwide due to wide use of anti-ulcerants, still it is not uncommon. But there is a debate regarding its conservative management over surgical management.

**Objective:** To determine whether surgery could be avoided in selected patients with perforated peptic ulcer disease

**Methods:** This study was conducted in the department of Surgery of Sir Salimullah Medical College and Mitford Hospital during the period from 1<sup>st</sup> March 2016 to 31<sup>st</sup> August 2016. After approval from the institutional ethics committee, 30 patients of suspected perforated peptic ulcer disease were successively assigned in this study on clinical and radiological basis. All were given non-operative regimen up to 24 hours. Then they were closely monitored to see improvement of clinical condition or development of any complication. Non-operative treatment was abandoned if the patient failed to improve or deteriorated within 24 hours of non-operative treatment. The data were collected by active participation of patients' interview in preformed data collection sheet.

**Results:** The data analysis of 30 patients yielded that most of them (86.67%) recovered well after receiving non-operative management, whereas only 4 patients (13.33%) showed no progression and were treated by laparotomy. 73.08% patients with uneventful outcome left the hospital within 10 days of admission and the others were a little late to leave.

**Conclusion:** Patients with perforated peptic ulcer disease can be effectively treated by conservative approach in properly selected cases by proper monitoring under strict supervision of an experienced consultant.

**Key words:** Outcome, Non-operative management, Peptic ulcer disease.

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### Introduction

Peptic ulcer disease is one of the most prevalent diseases of the gastrointestinal tract and its perforation remains a major life-threatening complication. Duodenal, antral and gastric body ulcers have 60%, 20% and 20% chance of perforation respectively<sup>1</sup>. Morbidity is common after peptic ulcer perforation and ranges from 17% to 63%<sup>2</sup>. Study on natural history of peptic ulcer disease perforation during the first half of the 20<sup>th</sup> century has shown that, just after perforation, the opening is rapidly sealed by adjacent organs<sup>3</sup>. As a quick response, a fibrin clot appears

around the perforation and is the onset of a definitive closure which associates adhesion between perforated and adjacent organs with healing of the digestive tract wall. Donovan stated that this phenomenon of self-healing is efficient in at least 50% of patients<sup>4</sup>.

Though In a good number of cases, perforation gets sealed up by the under surface of the liver and patients improve without any complication, the current treatment of perforated peptic ulcer is surgical repair<sup>2</sup>. Following surgery, pulmonary complications and wound infection are the most common complications<sup>3</sup>. Excellent results of surgery can be achieved in stable patients in good condition but surgery in elderly and in extremis is associated with high morbidity and mortality.

Conservative treatment is usually started routinely in every case before operation in order to resuscitate the patient. On subsequent follow up at frequent interval, it is often found that many patients improve clinically with nasogastric suction, antibiotic and intravenous fluid. So it may be thought that conservative treatment can be continued in selected cases of perforated peptic ulcer to avoid operation and its complication. But evaluation of clinical baseline parameters and frequent subsequent follow up is mandatory for continuation of conservative treatment<sup>5</sup>. This method of conservative management is known as Taylor method.

### Methods

This study was conducted in the department of Surgery of Sir Salimullah Medical College and Mitford Hospital during the period from 1<sup>st</sup> March 2016 to 31<sup>st</sup> August 2016. After approval from the institutional ethics committee, 30 patients of suspected perforated peptic ulcer disease were successively assigned in this study on clinical and radiological basis. Patients who were haemodynamically stable with less severe abdominal symptoms and had small hydro-pneumoperitoneum on admission were selected for conservative management. On the other hand, patients with diabetes, tuberculosis, malignancy, hemodynamic instability and huge hydro-pneumoperitoneum on X-ray were excluded from the study. After obtaining informed written consent, a descriptive cross-sectional study was carried out on these patients to find out the outcome of non-operative management of perforated peptic ulcer disease.

Resuscitative measures were taken in all cases in the form of nil by mouth, intravenous fluids, nasogastric suction, intravenous antibiotics, proton pump inhibitor and centrally acting analgesics. All were given non-operative regimen up to 24 hours. They were assessed clinically by close monitoring of presence of abdominal

pain, hydration status, pulse, blood pressure, temperature, respiratory rate and pattern, intake-output chart, abdominal distension and rigidity, hematological and imaging findings. Non-operative treatment was abandoned if the patient failed to improve or deteriorated within 24 hours of non-operative treatment.

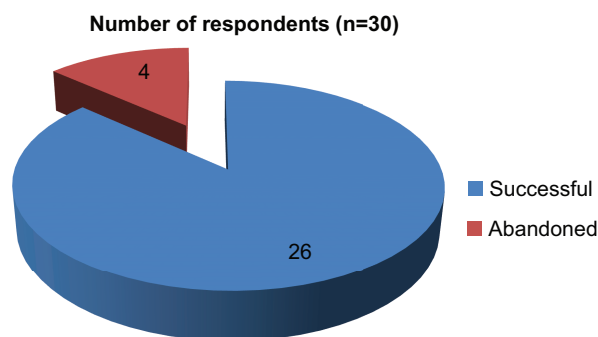
During the period of conservative management, data were collected on the variables of interest by a preformed data collection sheet and were analyzed by using computer based SPSS (Statistical Package for Social Science) software Version 16.0 for windows. Data were classified into groups, frequency observed and descriptive status (mean, median, mode, standard deviation) was calculated.

### Results

**Table 1.** Distribution of age (n=30)

Age group	Frequency (%)
20 – 30	8 (26.67%)
31 – 40	16 (53.33%)
41 – 50	6 (20%)
Total	30 (100%)
Mean age±SD (in years)	34.79±9.17
Age range (in years)	20 – 50

Among the 30 patients assigned in this study, maximum (53.33%) were in the 31-40 years age group with the mean age of 34.79±9.17. 50% of the patients were smokers or tobacco users in different forms and 36.67% had the history of inadvertent NSAIDs uses.



**Figure 1.** Distribution results of non-operative management (n=30)

26 (86.67%) patients of our study recovered well after receiving non-operative management, whereas only 4 (13.33%) showed deterioration and surgery became inevitable. These 4 patients who did not improve by conservative management were late to present in hospital (within 9-24 hours after initiation of symptoms).

**Table 2.** Distribution of complications (n=30)

Complications	Frequency (%)
A) Successful group (who were treated conservatively, n=26)	
Sub-diaphragmatic collection	5 (19.23%)
Pelvic abscess	1 (3.85%)
Respiratory tract infection*	1 (3.85%)
Prolongation of paralytic ileus*	1 (3.85%)
B) Abandoned group (who were treated by surgery, n=4)	
Surgical site infection	3 (75%)

\*multiple complications were present in a single respondent (n=30).

**Table 3.** Comparison between operative and conservative group

Variables	Abandoned conservative (n=4)	Successful conservative treatment(n=26)	P-value
Mean age (in years)	43.16±3.79	32.86±7.73	<0.05 <sup>S</sup>
Mean duration of perforation	11.00±2.31	6.79±1.86	>0.05 <sup>NS</sup>
Mean hospital stay (days)	9.13±2.17	11.93±1.77	>0.05 <sup>NS</sup>
Complications	3 (75%)	7 (26.92%)	>0.05 <sup>NS</sup>
Mortality	0 (0%)	0 (0%)	
Re-perforation	0 (0%)	0 (0%)	

Statistics were calculated by student's t test & chi square test NS: Not significant, S: Significant, P-value was significant <0.05

Maximum patients (73.08%) with uneventful outcome left hospital within 10 days of admission. Rest 15.38% and 11.54% patients left the hospital within 11-15 days and after 15 days respectively. The patients staying in hospital >10 days suffered from different complications.

Between successful and abandoned group, there was statistically significant difference in mean age. But there was no statistically significant difference in time elapsed to present in hospital following perforation and mean hospital stay.

### Discussion

The study was aimed to determine whether surgery could be avoided in some patients with peptic ulcer disease perforation by conservative management which is known as Taylor method. In this study, 30 patients were started to manage with conservative approach but ultimately 26 patients were treated successfully. Rest of the 4 patients needed surgery.

The overall mean age of the patients selected for conservative management was 34.79±9.17 years (range: 20-50 years) and higher frequency of PUD perforation was more evident in 31-40 years age group (53.33%) which report is almost similar to that of Chan WH et al<sup>6</sup> and Walt R et al<sup>7</sup>. It was also reported that the incidence of PUD perforations is influenced by the use of NSAIDs, which increases the risk 3-5 times<sup>8</sup>. In this study, it was observed that NSAIDs is responsible for 36.67% of perforations which was almost similar to previous report<sup>9</sup>.

The observations of this study showed that 86.67% patients achieved success by Taylor's method of managing perforated peptic ulcer disease, whereas Hanumanthappa MB reported 82% success in their study<sup>10</sup>. It was also observed that, patients who were late to present in hospital, required operative surgery more.

Ultimately this study displayed that, Taylor's conservative approach is quite effective although not free from complications. Complications among non-surgically managed patients of this study were: sub diaphragmatic abscess, pelvic abscess, RTI and prolongation of paralytic ileus. All these complications were managed conservatively either by antibiotic or by percutaneous drainage. Here sub-diaphragmatic abscess was the most common complication (19.23%), which was similar to the report of Hanumanthappa MB & his co-workers<sup>10</sup>.

One of the major concerns with the conservative management is the risk of wrong diagnosis. However, Taylor proposed that, with a regular reassessment, the wrong doing will become apparent and the conservative treatment can then be discontinued<sup>5</sup>.

### Conclusion

In the end, if we consider total hospital stay, treatment cost, surgical risks and patient's compliance, non-operative treatment is a safe and effective method for the management of perforated peptic ulcers particularly in the healthy younger ones who present early in the hospital with less severe symptoms. But as it is also associated with significant morbidity, the doctors applying this policy should be very cautious in case selection and decision making.

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