A PROSPECTIVE STUDY ON CONSERVATIVE MANAGEMENT OF PERFORATED PEPTIC ULCER IN A TERTIARY CARE HOSPITAL

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INTRODUCTION

The overall incidence of Peptic ulcer disease (PUD) is estimated to be 5% to 15% worldwide. The most common etiopathogenesis still remains Helicobacter pylori followed by NSAIDs. In India, H. pylori constitutes 22%, 87% and 88% in the age group 0-4, 10 -19 and adults respectively. The most common cause of peptic perforation worldwide still remains PUD with anterior duodenal wall,antral and gastric body ulcer comprising of 60%, 20% and 20% respectively. The overall mortality of perforation of a peptic ulcer is 10%. Surgical repair with or without an omental patch has been a generally widely accepted practice for peptic perforation. Crisp in 1843 noted that adhesions were found in a perforated stomach which prevented further leakage of contents into the peritoneum. Redwood in 1870 also conducted successful treatment for sealed off peptic ulcer by conservative management. Wangensteen in 1935 showed that perforated ulcers often get sealed by adhering to surrounding organs or omentum.

Herman – Taylor[1] in 1956 reported successfully treating 256 patients with peptic perforation out of which only 21 needed surgery with an overall mortality of 11%. The conservative management was done with effective nasogastric decompression, fluid resuscitation, broad spectrum antibiotics and administration of anti secretory agents.

AIM

To determine whether patients can be managed conservatively without surgery in cases of peptic perforation by Herman Taylor regimen.

MATERIALS AND METHODS

The study was conducted at Malda Medical College and hospital in department of General Surgery from June 2019 to May 2021. Forty patients with peptic perforation were taken into this study. All the forty patients admitted underwent a detailed history taking, clinical examination, routine blood tests and a radiologic evidence suggestive of pneumopeitoneum.

The inclusion criteria consisted of a diagnosis of perforation clinically and radiologically within 24 hours of presentation, hemodynamically stable patients and age less than 45 years.

The patients were managed conservatively with Herman Taylor Regimen which consisted of broad spectrum intravenous (iv) antibiotics, iv analgesics, adequate hydration, correction of electrolytes, iv proton pump inhibitors, continuous nasogastric decompression with Ryle's tube with intermittent active suctioning every four hourly. A strict intake output chart was maintained along with saturation, BP and temperature monitoring. An ultrasonography guided abdominal drain was placed to drain the leaked out contents. The patients were examined clinically frequently to look for abdominal distention, bowel sounds,

any collection in pelvis by per rectal method and by ultrasonography.

The patients were kept nil per oral for the first four days, and on clinically improving they were started with oral sips initially with clamping of Ryle's tube followed by liquid and then normal diet. Conservative management was abandoned if patients had increasing temperature, fall in BP, tachycardia, high leucocyte count and features of sepsis.

RESULTS

All the forty patients presented within 24 hours of onset of symptoms. The patients who failed to meet the inclusion criteria underwent immediate surgery with laparotomy. Out of the forty patients, four patients failed to improve on conservative management and underwent laparotomy. The mortality for patients undergoing laparotomy was statistically significant ANOVA test (p=0.022). A Tukey post hoc test showed that the patients with associated factors of smoking and dyspepsia had more duration of hospital stay than patients with only history of dyspepsia (p=0.038) and this was statistically significant.The mean age of presentation was found to be 35.8 years (SD 6.4). The median stay at hospital was observed to be 9.4 days (SD 3.1).

COMPLICATIONS

Two patients who failed conservative treatment and underwent laparotomy died due to sepsis. The other two patients developed pneumonia and the latter developed UTI.

The complications observed in the conservative group included hypoproteinemia (N=2), prolonged ileus (N=3), UTI (N=4). Twenty nine patients managed conservatively had no complications. One mortality was present among the conservatively managed group.

Clinical Characteristics of Patients Presenting With Perforated Peptic Ulcer

CHARACTERISTICS	NUMBER OF PATIENTS (PERCENTAGE)
Male	31(77.5)
Female	9(22.5)
Analgesics	1(2.5)
Dyspepsia	17(42.5)
Smoker	4(10)
Smoker and h/o dyspepsia	4(10)
Analgesic and h/o dyspepsia	3(7.5)
Alcoholic and h/o dyspepsia	2(5)
Alcoholic, h/o dyspepsia and smoker	2(5)

Complications of Patients Presenting With Perforated Peptic Ulcer

Hypoproteinemia	2(5)
Midline exploration	1(2.5)
Midline exploration , pneumonia, hypoproteinemia	1(2.5)
Midline exploration , hypoproteinemia	1(2.5)
Prolonged ileus	1(2.5)
Prolonged ileus, UTI	2(5)
Midline exploration, pneumonia, UTI	1(2.5)
Urinary Tract Infection	2(5)
No complication	29(72.5)

Summary of age and duration of stay at hospital of study participants

Characteristic	**Mean (SD)**
Age	35.8(6.4)
Duration of stay at hospital	9.4(3.1)

Mean difference in duration of hospital stay in the patients with different associated factors (N=40)

Comparison groups		**Mean difference (SE)**	**P value**
Smoker and dyspepsia	Dyspepsia	4.65(1.42)	0.038
	No history	5.42(1.60)	0.029

Association between treatment type and mortality of patients (N=40)

Characteristic	**Total**	**Mortality n (%)**	**PR(95% CI)**	**P value**
Type of treatment	40			
Conservative treatment	36	1 (2.8)	1	

OT	4	2 (50.0)	1.94(0.72-5.19)	0.022

DISCHARGE AND FOLLOW UP

Thirty five patients were successfully discharged after conservative management. They were discharged with proton pump inhibitors, HP kits for 14 days, strict abstinence from alcohol and smoking and from spicy and oily food. On follow up a routine upper GI Endoscopy was done after 3 months. Nine patients did not come for follow up. The rest 27 patients were followed up for a period of two years. None of them required any surgery or developed re perforation in subsequent follow ups.

DISCUSSION

Thirty five patients (87.5%) were successfully treated with conservative treatment. One died even after conservative management. Four patients underwent laparotomy as they were not improving on conservative treatment. However out of the four, two died due to complications. The conservative management was achieved with radiologically confirmed diagnosis of perforation , continuous nasogastric suction both active and passive and gastric decompression, strict vitals charting, intake output monitoring, iv antibiotics, proton pump inhibitors and drainage of peritoneal fluid with abdominal drain. The successful conservative treatment prevented from the patients undergoing laparotomy. The conservative management was possible with the evidence of sealed peptic ulcer. In most studies the conservative management was abandoned within 12 hours of presentation if patient was hemodynamically unstable. In our study all the four patients who were not improving on conservative management underwent laparotomy after four days. The patients who were conservatively managed and improved were discharged on HP kits, proton pump inhibitors, strict abstinence from alcohol and smoking. Routine upper GI endoscopy revealed sealed perforation and none of them developed re perforation or required an operation in subsequent follow ups for a duration of two years. With the Herman Taylor regimen strictly followed morbidity and mortality was reduced when compared to surgically explored patients.

Taylor and Visick found that sealed peptic ulcer showed signs of perforation when they operated on perforated duodenal ulcer patients. A study conducted by Rosoff[2] on 377 patients concluded that 43% of ulcer sealed off spontaneously. Songneeet al[3] conducted a study on 82 patients and concluded that over 50% patients responded and improved on conservative management. The criteria used by him for surgery was (age more than 59 years, pneumoperitoneum larger than the first lumbar vertebrae, heart rate >94, and pain on digital rectal examination).

The extreme variation between perforation, presentation to the hospital and initiation of treatment has been a concern in initiating conservative management. A study reported in Hong Kong series[4] reported the duration of presentation the non-operative group to be 10.5 hours. The concern of reperforation following conservative management was addressed by Donovan et al[2] where no patients developed leak and Berne and Rosoff[5] reported leaks in 2 out of 109 patients managed conservatively. Rosoff also reported intra - abdominal abscess in 3 out of 109 patients.

CONCLUSIONS

An initial diagnosis and selection of patients is important for Herman Taylor regimen. A round the clock vigorous assessment can prevent the need for operation. This also allows surgeons to adapt to non -surgical procedures in selected cases where the perforation has been sealed off or where the risk of operation is very high.

REFERENCES

1. Taylor H, Warren RP. Perforated acute and chronic pepticulcer. Conservative treatment. Lancet 1956; i: 397-9.
2. Donovan AJ, Vinson TC, Maulsby GO, Gewin JR. Selectivetreatment of duodenal ulcer with perforation. Ann Surg1979; 189: 627-36.

3. Songne B, Jean F, Foulatier O, Khalil H, Scotte M. Nonoperative treatment for perforated peptic ulcer: results of aprospective study. Ann Chir 2004; 129: 578-82.
4. Crofts TJ, Park KGM, Steele RJC, Li AKC. A randomized trialof non-operative treatment for perforated peptic ulcer. NEngl J Med 1989; 320: 970-3.
5. Berne CJ, Rosoff L Sr. Acute perforation of peptic ulcer. In:Nyhus LN, Wastell O, editors. Surgery of the stomach andduodenum. Boston, Mass: Little Brown & Co Inc; 1986: 457-73
6. Conservative Management of Perforated PepticUlcer, RuangsakNusree, MD, Department of Surgery, Chainat General Hospital, Chainat, Thailand
7. Non operative Management of sealed off peptic ulcer perforation: A clinical study at a Rural institute, Balachandar M, AnirudhSuseel N, Department of general Surgery, P.E.S. Institutre of Medical Sciences and Research, Kuppam, Andhra Pradesh
8. Alizadeh N, Buhler L, Huber O, Morel P. Conservative treatment of gastroduodenal peptic ulcer perforations: indications and results. Schweiz Med WochenschrSuppl 1997; 89: 17S-19S.
9. Ball AB, Thomas PA, Evans SJ. Operative mortality afterperforated peptic ulcer. Br J Surg 1989; 76: 521-2.
10. ABIDULLAH, HAYA HUSSAIN, et al. "Pharmacotherapeutical Study of Peptic Ulcer Disease." *Social Sciences (IMPACT: IJRANSS)* 1.3 (2013): 29-36.
11. MUSTAFA, MURTAZA, M. Iftikar, and K. Rajesh. "Role of Heliocobacter pylori infection in peptic ulcer disease." *International Journal of Research in Applied, Natural and Social Sciences* 3.8 (2015): 29-38.