



## A STUDY ON MORTALITY IN PERFORATED PEPTIC ULCER

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**ABSTRACT** NSAIDs are responsible for most of the perforated peptic ulcers. Patients with perforated peptic ulcer have a hospital mortality risk of 10% to 20%. It is a significant problem for India, so this study was done to determine the magnitude and management of mortality risk. A study of 132 cases of perforated peptic ulcer admitted in government general hospital, Kurnool, Andhrapradesh, India from August 2017 to July 2019 was carried out. Alcohol(38.6%), smoking and NSAIDs are important etiologic factors for peptic ulcer. The mortality in perforated peptic ulceration is 33.3%. Risk of mortality was associated with shock at presentation and time delay in presentation. A perforated peptic ulcer is a surgical emergency. It is a life-threatening condition which requires early diagnosis and immediate surgery — delayed management results in mortality. Most require surgery with omental pedicle patch. Mortality is high with a time delay to the presentation, medical comorbidities, shock at the time presentation and old age (>60yrs)

**KEYWORDS :** Peptic ulcer, perforation, mortality**INTRODUCTION**

Despite the widespread use of gastric antisecretory agents and H.pylori eradication therapy, the incidence of perforated peptic ulcer has changed little. Smoking and NSAIDs are important causes of ulcer perforations.<sup>1</sup> Patients with perforated peptic ulcer have a hospital mortality risk of 10% to 20%.<sup>2</sup> It is a significant problem for India, where patients are socio-economically poor and present late to the hospital with shock. The present research focuses on mortality of perforated peptic ulcers, presenting our experience in approaching these patients.

**PATIENTS AND METHODS**

A study of 132 cases of perforated peptic ulcer admitted in government general hospital, Kurnool, Andhrapradesh, India from August 2017 to July 2019 was carried out. The data collected include aetiology, age and sex of the patient, time delay to the presentation, shock at the time of admission, concurrent medical illness, cirrhosis, management and outcome.

**Inclusion criteria:** includes the Adult age group, Both male and female, Peptic ulcer perforations.

**Exclusion criteria:** excludes Perforations in bowel other than gastroduodenal region, uterine perforation, Traumatic perforations, paediatric age group.

The diagnosis made with clinical findings and supported by plain x-ray erect abdomen — a detailed history taken when the condition of the patient is stable. In critically ill patients, the patients resuscitated, and history has taken after the patient stabilised.

In all patients, Nyles tube aspiration was done. Most patients with perforated peptic ulcer are adequately treated by peritoneal washout and omental patch, with subsequent elimination of risk factors(i.e., treat Helicobacter; stop smoking; stop NSAIDs; take acid suppression with PPIs). The conservative management was adopted where the condition of the patient was very poor(shock at presentation), and the peritoneal tap has done with bilateral 32FG ADK placement.

**RESULTS**

Perforation is the second most common complication of a peptic ulcer but nowadays a more common indication for operation than bleeding. As with bleeding ulcer, NSAID and aspirin use have been inextricably linked with perforated PUD, especially in the elderly population.<sup>3</sup> Smoking and NSAIDs are important causes of peptic ulcer perforations(Table 1).

Cause	Total	%
Alcohol	51	38.6

NSAIDs	32	24.2
Smoking	21	16
Steroid	9	6.8
Low socioeconomic	4	3
Miscellaneous	15	11.3

Several factors are responsible for the poor outcome and prognosis after perforated peptic ulcer, including Time delay to presentation and treatment, delay in diagnosis (>24 hours); medical comorbidities (recent MI, Diabetes, pulmonary TB), shock at the time presentation increasing age (>60yrs). Site of perforation—perforation in the gastric region is associated with a poorer prognosis, Cirrhosis.<sup>1,4,5</sup> (Table 2)

Cause	Total	%
Shock at presentation	11	8.3
Late presentation(>24hrs)	8	6
Old age(>60yrs)	7	5.3
Medical comorbidities	6	4.5
Post-operative complications (a)	5	3.8
Size of ulcer(≥2cms)	4	3
Re leak	2	1.5
Misdiagnosis (b)	1	0.8
TOTAL	44	33.3

a, ARF, ARDS, septicemia; b, by inexperienced surgical residents- peritoneal fluid for ascites and medical residents- TB abdomen for sealed-off perforation, causes a delay in diagnosis and management.

**DISCUSSION**

Perforated peptic ulcers are seen frequently in Indian population. Mortality in perforated peptic ulcer in our study is 33.3%. The most common cause of mortality is a shock at presentation. It is due to diffuse peritonitis, caused by bacteremia.

Patients present with sudden-onset severe generalised abdominal pain, diminished bowel sounds, guarding rigidity of the abdominal musculature. The abdomen does not move with respiration. Abdomen distension with massive free fluid in the abdomen causes distress.

Few patients presented only with pain right iliac fossa, mimics acute appendicitis but on USG appendix is normal, but the pain is out of proportion, as a leak from the ulcer is small and the fluid may track down the right paracolic gutter.<sup>4</sup>

The cause for late presentations observed are poor patients initially take treatment at quacks, commonly the old age patient who is taking NSAIDs will have fewer symptoms, perhaps because of the use of

potent anti-inflammatory drugs (steroids) and posterior perforations into retroperitoneum and lesser sac.

The erect x-ray abdomen shows pneumoperitoneum in 80% of cases.<sup>6,7</sup> (Fig.1) If free air is not present, CT abdomen is very sensitive for demonstrating perforation. USG abdomen reveals echogenic free fluid, turbid and on aspiration bile stained indicates peptic ulcer perforation. All patients should have serum amylase performed, as distinguishing between peptic ulcer, perforation and pancreatitis can be difficult.



**Figure 1, Pneumoperitoneum**



**Figure 2, Gastric perforation**

Critically ill patients who are unfit for surgery were resuscitated and treated conservatively with intravenous fluids, nasogastric suction and antibiotics. After the recovery of patients, the water-soluble gastrografin contrast study done to confirm that the ulcer sealed and no extravasation of contrast into the peritoneal cavity. In one case, a simple test is done with oral intake of methylene blue in 200ml water, and no leakage observed in ADK drains.

The stable cases were taken for surgery; It is essential to perform an adequate four-quadrant biopsy of ulcers that are not excised.<sup>8</sup> A perforated gastric ulcer carries higher overall mortality that ranges from 10% to 40% and increases significantly with age (>65 years).<sup>9</sup>

Sewing the ulcer closed before placing the omental pedicle over the perforation is discouraged because it reduces the surface contact of the omentum with the duodenal mucosa.<sup>1</sup> The sutures are tied over this omental pedicle to secure this in place, the omentum plugs the hole and is closely applied to the serosa, ensuring watertight closure. These sutures should not be tied too tightly, to avoid strangulation of the omental patch. In large duodenal perforation cases, a jejunal serosal patch was kept. For large gastric perforation partial gastrectomy with gastrojejunostomy done.

Following the closure of the ulcer, thorough irrigation of the peritoneal cavity should be done with warm saline irrigation. Drains are not needed, and their use is discouraged because it tends to create a negative suction vacuum that can interfere with the repair.<sup>1</sup> We prefer to keep bilateral 32FG ADK drains. It is important that the stomach is kept empty postoperatively by nasogastric suction, and that gastric antisecretory agents are commenced to promote healing in the residual ulcer.<sup>4</sup> We observed mortality in a case, postoperatively, oral intake of a large quantity of water against medical advice. We prefer to use H.pylori kits for 14days and PPIs for 12weeks. After 12 weeks, the patient followed with upper GI endoscopy.

## CONCLUSION

A perforated peptic ulcer is a surgical emergency. It is a life-threatening condition which requires early diagnosis and immediate surgery. Delayed management results in mortality. Most require

surgery with omental pedicle patch. Mortality is high with a time delay to the presentation, medical comorbidities, shock at the time presentation and old age (>60yrs).

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