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# Open versus laparoscopic repair for perforated peptic ulcers in RMMCH

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## Abstract

**Background:** The goal of this study was to describe epidemiology and management strategies of the perforated peptic ulcer and the comparison of open and laparoscopic approach in the management of Perforated Peptic Ulcer. Perforated peptic ulcer (PPU), despite anti-ulcer medication and Helicobacter eradication, is still the most common indication for emergency gastric surgery associated with high morbidity and mortality. Outcome might be improved by performing this procedure laparoscopically, but there is no consensus on whether the benefits of laparoscopic closure of perforated peptic ulcer outweigh the dis-advantages such as prolonged surgery time and greater expense.

**Methods:** A retrospective study involved 45 patients with a clinical diagnosis of perforated peptic ulcer who were randomly assigned to undergo either open or laparoscopic omental patch repair. Patients were excluded for a history of upper abdominal surgery, concomitant evidence of bleeding from the ulcer, or gastric outlet obstruction. Patients with clinically sealed-off perforations without signs of peritonitis or sepsis were treated without surgery. Laparoscopic repair would be converted to an open procedure for technical difficulties, nonjuxtapyloric gastric ulcers, or perforations larger than 10 mm. The primary end-point was perioperative parenteral analgesic requirement. Secondary endpoints were operative time, postoperative pain score and length of post-operative hospital stay.

**Results:** 45 Patients diagnosed with perforated peptic ulcer were included; out of which 30 (66%) were male and 15 (33%) were female patients of ages ranging between35 to 60 years. The two groups were comparable in age, sex, site and size of perforations. Both the groups were subjected to open and laparoscopic repair randomly. After surgery, patients in the laparoscopic group required significantly less parenteral analgesics than those who underwent open repair, and the visual analog pain scores in days 1 and 3 after surgery were significantly lower in the laparoscopic group as well. Laparoscopic repair required significantly less time to complete than open repair. The median postoperative stay was 6 days in the laparoscopic group versus 7 days in the open group. There were fewer chest infections in the laparoscopic group. There were two intra-abdominal collections in the laparoscopic group.

**Conclusions:** Laparoscopic repair of perforated peptic ulcer is a safe and reliable procedure. It was associated with a shorter operating time, less postoperative pain, reduced chest

complications, a shorter postoperative hospital stay, and earlier returns to normal daily activities than the conventional open repair.

**Keywords:** Management, Perforated Peptic Ulcer (PPU)

## Introduction

Peptic ulcer disease remains one of the most prevalent diseases of the gastrointestinal tract with annual incidence ranging from 0.1% to 0.3% in western countries. There are well known two major precipitating factors: Helicobacter pylori infection and the use of Non-steroidal

Anti-inflammatory drugs (NSAIDs) and the ulcer incidence increases with age for both duodenal and gastric ulcers. Complications of peptic ulcer disease are bleeding, perforation and obstruction. These complications can occur in patients with peptic ulcers of any etiology. Perforation occurs in about 5% to 10% of patients with active ulcer disease. Duodenal, antral and gastric body-ulcers account for 60%, 20% and 20% of perforations, respectively, of peptic ulcers. Open and laparoscopic abdominal explorations are always indicated in gastro-duodenal perforation. The peptic ulcer disease has reduced due to improvements in diagnosis by endoscopy and anti-ulcer drugs advancement with eradication of Helicobacter pylori. The majority of the peptic ulcers are associated with Helicobacter pylori infection and it is now clear that eradication of H–pylori dramatically reduces ulcer recurrence. The introduction of Helicobacter pylori eradication therapy and the use of proton pump inhibitors have led to a decline in the incidence of perforated peptic ulcers (PPU). A multi-disciplinary approach with timely involvement of a trained endoscopist and endoscopy assistant is widely recommended. Non-operative management has been shown to be effective in certain patients although it is difficult to predict reliably those who will respond successfully. Despite dramatic improvements in peptic ulcer management in the last two decades, the frequency of emergency surgery for perforated gastro-duodenal ulcer has remained stable or even increased. Surgical management usually involves an upper midline laparotomy and repair of the perforation with a combination of simple suture repair and pedicledomentoplasty. The advantage of laparoscopy compared to open surgery is reported to include less Post-operative pain, less analgesic use, earlier oral postoperative intake, and shorter re-convalescence. The rationale for surveillance endoscopy in patients with gastric ulceration is based on the fact that gastric ulcers that initially appear endoscopically and histologically benign may eventually prove to be malignant. Surveillance endoscopy should be considered in patients whose gastric ulcers appears endoscopically suspicious for malignancy, even if biopsy samples from the index endoscopy are benign. False negative biopsy specimen results have been reported to occur in 2 % to 5 % of malignant ulcers and any unhealed ulcers at follow up examination after 8-12weeks of medical therapy should undergo repeat biopsy. Recently different drug therapies are used for the treatment of gastric ulcer in combination, which include proton pump inhibitors (PPIs), histamine receptor blockers and misoprostol.

## Methodology

### Study design and setting:

This was a retrospective study & performed at Rajah Muthiah Medical College and Hospital in Chidambaram within the months of April 2016 - June 2016. RMMCH is a tertiary care teaching hospital in Chidambaram.

**Study subject:**

**Inclusion criteria:**

- Patients of all ages who were operated for perforated peptic ulcers at RMMCH during the study period were included

**Exclusion criteria:**

- Patients with incomplete data.
- Pregnant women were also excluded from the study.

**Results and discussion**

The commonest presenting symptoms of perforated peptic ulcer disease were Abdominal-distension in 63.07%, Epigastric pain in 76.9% and vomiting in 35.38% patients. 35.3% presented within 24 hours of onset of symptoms. 26.15% presented between 24 and 48 hours, and 38.4% 48 hours afterwards.63.07% patients reported no previous history of treatment for Peptic ulcer disease. 9.2% patients presented with re-perforation, 18.4% patients has the history of recent NSAID's therapy for Arthritic problems. Other factors included alcohol consumption 58.4% and 40% patients respectively. 21.5% patients were reported with post-operative complications. Of these Cellulitis (50%) was the most common complication. The overall length of hospital stay ranged from 1 to 50 days with an average of 14 days

**Discussion**

Peptic ulcer disease remains one of the most prevalent disease of the gastrointestinal tract with annual incidence ranging from 0.1% to 0.3% in western countries. Past investigations shows the male to female ratio of 2:1 (initially it was 7:1).But in this study 66.76% male and 33% female patients with a ratio of 1.1:1.

It is important to stratify patients into different categories based on the likelihood of morbidity and mortality, so that high-risk patients can receive more appropriate treatment and greater intensive care. In this study 21.5% patients were reported with post-operative complications. Of these Cellulitis 50% was the most common complication. The overall length of hospital stay ranged from 1 to 50 days with an average of 14 days.

**Conclusion**

In patients with perforated peptic ulcer, the non-operative treatment with careful observation and resuscitation may be safely allowed, except in patients over 70 years old, and that the use of such an observation period can obviate the need for emergency surgery. It is the most common problem mainly affecting the males. Simple closure with omental patch is giving better results. But omental closure followed by the eradication of Helicobacter pylori was giving more excellent results.

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