



Outcome of Nontraumatic Gastrointestinal Perforations

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Abstract

This is a single centre, prospective observational study that analyses the various outcomes of non-traumatic gastrointestinal perforations.

Keywords: *Non traumatic, gastrointestinal perforation, peritonitis, sepsis, MODS.*

Introduction

Gastrointestinal perforation represents one of the most common surgical emergencies in the surgical field^[5]. Despite advances in surgical techniques, antimicrobial therapy and intensive care support, management of peritonitis continues to be highly demanding, difficult and complex. The spectrum of etiology of perforation continues to be different from that of western countries and there is paucity of data from India regarding its etiology, prognostic indicators, morbidity and mortality patterns.

Evaluation and management of gastrointestinal perforations provide some of the most challenging experiences for a surgeon with the advent of new technology. Symptoms of GI tract perforations are mainly acute onset of abdominal pain, vomiting, fever, abdominal distension and shock. The way of presentation may differ with the underlying cause for perforation. Surgeons must continually reassess standard method of treatment and be receptive to new ideas.

The earliest study on record about Hippocratic facies seen in terminal stages of peritonitis has been

described by Hippocrates^[1] (460 BC). The 1st published report in 1727 of a perforated gastric ulcer is credited to Rawlinson^[2]. The first published report of a perforated duodenal ulcer was Hambergeri 2 in 1746. In 1767 Holliston reported the first successful repair of gastric injury^[3]. Devi AK, S. Paul and N. Bhattacharjee^[4] in 1994 in their study of 171 patients showed that simple closer is safe emergency procedure in all perforated duodenal ulcers. Wan Lee in 1996 compared Laparoscopic versus open repair of perforated peptic ulcer using suture and suture less technique. He observed that longer time is required for laparoscopic repair and found suture less repair is as safe as suture repair.

Materials and Methods

This is a single centre, prospective, comparative and observational study conducted in the department of general surgery in a tertiary care teaching hospital from January 2019 to December 2019. The study is carried out after clearance by the Institutional Thesis Approval and Ethics Committees.

A written informed consent form is obtained from all patients participating in the study.

Procedures undertaken:

Procedure	Number	Percentage
Perforation closure + Omental patch	20	40
Biopsy + Perforation Closure + Omental patch	6	12
Laparoscopic Perforation Closure	3	6
Cholecystectomy	3	6
Open Appendectomy	6	12
Laparoscopic appendectomy	3	6
Resection +end –to- end anastomosis	4	8
Simple closure in 2 layers	4	8
Resection + iliotrasverse Anastomosis	1	2
	50	100

Inclusion Criteria

All the patients presenting with signs and symptoms of hollow viscus perforation

Exclusion Criteria

Perforation due to:

Trauma

Foreign body

Iatrogenic causes

Patients who didn't give consent for the study

Results

Anatomical site of Perforation

Site of Perforation	Incidence	Percentage
Stomach	6	12
Duodenum	23	46
Gallbladder	3	6
Ileum	8	16
Appendix	9	18
Colon	1	2
Total	50	100

Duodenal ulcer perforation was the commonest cause of GIT perforation with male preponderance. More common in third decade. More common in lower socioeconomic class. Smoking and alcohol were aggravating factors. Most of the patients presents with pain abdomen, fever and vomiting. Simple closure with omental patch was very effective in the management. Next to duodenum appendicular perforation was more common^[4].

Gastric perforation was more common in fourth decade. Ileal perforation was more common in third decade. Commonest causes being typhoid and tuberculosis. Single ileal perforation was more common than multiple perforation. Closure in two layers was very much effective in small bowel perforation. Prognostic determinant in perforation were delay in presentation to the hospital and degree of contamination. Conservative management increases the number of hospital stay.

Conclusion

A total of 50 cases of nontraumatic gastrointestinal perforations were studied and we conclude:

- Peptic perforation is the major cause of nontraumatic gastrointestinal perforation.
- Pain, distention and vomitings were the major symptoms and tenderness with guarding/rigidity being the predominant sign.
- Majority of patients were male with peak incidence in 3rd to 4th decade.
- Gas under the diaphragm in erect abdomen x-ray is indicative of gastrointestinal perforation but not obligatory.
- Surgery is the main mode of treatment. Simple closure with omental patch is treatment of choice for peptic perforation, Appendectomy for Appendicular perforation and cholecystectomy for gall bladder perforation.

Discussion

Gastrointestinal perforation may occur at any anatomical location from the upper oesophagus to the anorectal junction.

Delay in resuscitation and definitive surgery will progress rapidly into **septic shock, multi organ dysfunction, and death**, hence it should be one of the first diagnoses considered and **excluded in all patients** who present with acute abdominal pain.

The main feature of gastrointestinal perforation is **pain**. Typically, this is rapid onset and sharp in nature. Patients are **systemically unwell** therefore

may also have associated malaise, vomiting, and lethargy.

On examination, patients will **look unwell** and often have features of sepsis. On examining their abdomen, they will have **features of peritonitis**

Fifty percent of the patients developed post-operative complications in our study, out of which wound sepsis was seen in 22% of cases. Many patients had chest infections (8%). It was more common in older patients. Our study reported mortality of 4%. The cause of death was mainly due to late presentation and septicaemia.

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