

Pattern of Emergency Laparotomy: A Single Centre Study

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Abstract: Emergency laparotomy (EL) is performed in the setting of acute surgical abdomen for both diagnosis as well as treatment. This study was intended to study the pattern of indication and surgery in cases of emergency laparotomy in our hospital. This retrospective analytic study was conducted at a tertiary care center during 6 calendar months period among 70 cases of acute abdomen requiring emergency laparotomy (EL). In this study, male: female ratio was 4:3 and mean age was 45.34 ± 17.02 (range 13-75) years. The most common co-morbid condition was hypertension (n=10, 14.3%) followed by tuberculosis and chronic obstructive pulmonary disease associated with smoking behaviour (=4, 5.7% each). The mean time taken for surgery was 88.94 ± 41.54 (range 30-240) minutes and the frequency of bleeding (other than standard bleeding during the surgical procedure) was 31.43% (n=22/70). Wound infection occurred in 44/70 (62.86%) patients. Peptic perforation (16/70, 22.9%) was the most common indication of EL followed by appendicular peritonitis (10, 14.3%). The most common surgical procedure done was repair of peptic perforation (14/70, 20%). Appendectomy was the next common procedure done in 10/70 (14.3%) cases.

Keywords: Emergency laparotomy, acute surgical abdomen, indication and surgery

INTRODUCTION:

Many surgical conditions requires prompt interventions to reduce disease related morbidity and mortality. Emergency laparotomy (EL) is performed in the setting of acute surgical abdomen for both diagnosis as well as treatment. EL begins with opening of the abdomen for search of the cause of acute abdomen and once the underlying cause is confirmed, it ends up with a therapeutic procedure either curative or diagnostic.

The indications of emergency laparotomy depend on many factors including socioeconomic, cultural or geographical factors. The clinical features, underlying pathology, anatomical site of surgery and perioperative management varies widely in emergency laparotomy compared with elective laparotomy and these factors collectively determine the type of surgery in emergency laparotomy.

Mortality and complications in patients undergoing emergency laparotomy depend on perioperative risk factors and delay in presentation and treatment [1, 2]. Patients with conditions that only permit palliative surgery such as cancer have particularly high mortality rates [3]. The acute physiological insult of abdominal pathology, added to chronic ill health, complicates the postoperative course [4].

This study was intended to study the pattern of indication and surgery in cases of emergency laparotomy in our hospital.

MATERIAL AND METHODS

This retrospective analytic study was conducted at a tertiary care center during 6 calendar months period among 70 cases of acute abdomen requiring emergency laparotomy (EL). The recruited patients were above 18 years of age and had given written informed consent for the surgery. Pregnant females were excluded from the study. Initially a midline incision was made during EL and further surgery was done according to the situation and need. Standard post-operative care was provided to each patient.

In case of uneventful recovery patients were discharged from hospital. If patient had complication, they were managed accordingly. All the patients were followed up regularly after surgery for at least 3 months.

Statistical Analysis

Microsoft Excel® and SPSS® 20 for Windows® were used for data storage and analysis. The qualitative

data were expressed in percentages and quantitative data were expressed as mean \pm standard deviation.

RESULTS

In our study 70 patients of EL were included with male: female ratio of 4:3 and mean age of 45.34 \pm 17.02 (range 13-75) years. The most common co-morbid condition was hypertension (n=10, 14.3%)

followed by tuberculosis and chronic obstructive pulmonary disease associated with smoking behaviour (n=4, 5.7% each). The mean time taken for surgery was 88.94 \pm 41.54 (range 30-240) minutes and the frequency of bleeding (other than standard bleeding during the surgical procedure) was 31.43% (n=22/70). Wound infection occurred in 44/70 (62.86%) patients (Table No.1).

Table 1: Characteristics of patients (n=35)

Age (years)	45.34 \pm 17.02 (range 13-75)
M:F	4:3
Comorbid conditions	
HTN (n)	10 (14.3%)
DM (n)	00
TB (n)	4 (5.7%)
COPD (n)	4 (5.7%)
Time taken for surgery (minutes)	88.94 \pm 41.54 (range 30-240)
Bleeding (n)	22 (31.43 %)
Wound infection (n)	44 (62.86 %)
Septicaemia (n)	40 (57.14%)
TLC (cells/dl)	11401.14 \pm 5122.66
Mean duration of pain (days)	10.37 \pm 6.26
Mean duration of Hospital stay (days)	12.91 \pm 5.46
Duration of absenteeism from work (days)	28.66 \pm 13.75

Peptic perforation (16/70, 22.9%) was the most common indication of EL followed by appendicular peritonitis (10, 14.3%) (Table No.2).

Table 2: Indications of emergency laparotomy

Peptic perforation	16 (22.9%)
Appendicular peritonitis	10 (14.3%)
SAIO, Burst abdomen	8 (11.4%)
Sub acute intestinal obstruction	4 (5.7%)
Perforation peritonitis	4 (5.7%)
Gastric perforation	4 (5.7%)
Ileal perforation peritonitis	4 (5.7%)
obstructed inguinal hernia with gangrenous ileum	2 (2.9%)
Advanced metastatic carcinoma with ascitis	2 (2.9%)
Ileal perforation	2 (2.9%)
Stricture ileocecal region, perforation and faecal peritonitis	2 (2.9%)
Splenic flexure mass with perforation	2 (2.9%)
SAIO sealed perforation of sigmoid colon and peritonitis	2 (2.9%)
SAIO sealed perforation of ascending colon and peritonitis	2 (2.9%)
SAIO peritonitis (biliary peritonitis)	2 (2.9%)
Omphalocele	2 (2.9%)
Peritonitis and mesenteric vascular occlusion	2 (2.9%)

The types of surgeries performed during EL are enumerated in Table No.3. As the most common indication of EL was peptic perforation, so the most common surgical procedure done was repair of peptic

perforation (14/70, 20%). Appendisectomy was the next common procedure done in 10/70 (14.3%) cases (Table No.3).

Table 3: Type of surgery performed during emergency laparotomy

Repair of peptic perforation	14 (20.0)
Appendisectomy	10 (14.3)
Closure of ileal perforation	8 (11.4)
Release of ileal loop adhesion from pelvis	6 (8.6)
Loop ileostomy	6 (8.6)
Exploratory Laparotomy. for SAIO & removal of foreign body(mop sponge) and adhesiolysis	6 (8.6)
Diagnostic laparoscopy, adhesiolysis& Drainage	4 (5.7)
left hemicolectomy, resection & anastomosis	4 (5.7)
Removal of gangrenous ileum with Repair of internal ring and posterior wall repair	2 (2.9%)
Closure of perforation, adhesiolysis& rectum repair	2 (2.9%)
Ileocaecal resection and end to end anastomosis	2 (2.9%)
Adhesiolysis and Omental patch seal	2 (2.9%)
Ileal volvulus derotation	2 (2.9%)
Massive resection of small and large intestine & anastomosis	2 (2.9%)

DISCUSSION

This study was planned to study the pattern of indication and surgery in cases of emergency laparotomy in our hospital. The type of operative procedure depends on patient general condition, peritoneal contamination, site of pathology, gut viability and surgeon's decision.

In our study mean age of study population was 45.34 ± 17.02 years which was very close to previous study (42.4 years) [5]. In our study, the most common surgical indication was peptic perforation and most common surgical procedure done was repair of peptic perforation (14/70, 20%). Among cases of peptic perforation, 2/70 (2.9%) cases sealed with omental patch. Appendisectomy was the next common procedure (14.3%). The peptic perforation is also found as one of the common indication of EL [6-8]. Appendisectomy is also a common indication of EL reported in previous studies [9]. The clinical-radiological features of perforated peptic ulcer may mimic those of a ruptured appendix as secretions trickle down through the right paracolic gutter into the right iliac fossa [10]. In our study all cases of peptic perforation were managed with emergency laparotomy and repair of peptic perforation successfully and all these patients were discharged from the hospital after recovery.

CONCLUSION

The peptic perforation was the most common indication of emergency laparotomy followed by appendicular peritonitis at our hospital.

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