



A Pattern and Incidence Study of Complications after Emergency Laparotomy

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ABSTRACT

Background and Objectives: The study of emergency laparotomies are being carried out prospectively at the Department of General Surgery at a tertiary care facility affiliated with the Parul Institute of Medical Science and Research (Parul Sevashram Hospital).

Methods: A tertiary care teaching hospital's Department of General Surgery conducted a prospective study involving 100 emergency laparotomy cases from July 2020 to May 2021. Every patient underwent surgery using a midline vertical incision. The main aim of the study is to identify various complications occurring following emergency laparotomies and various factors influencing them.

All patients followed up at least for a period of 6 months after surgery.

Results: 60 patients developed one or more complications postoperatively, 19 (31.7%) patients had abdominal complications; 34 (56.7%) had wound complications; 12 (20%) had chest complications and 4 (6.7%) had limb complications

Conclusion: Even with the availability of safe anaesthetic, broad range of antibiotics, and advanced experimental or investigational devices, the risk of complications and mortality from emergency laparotomies remains significant. Chest problems were associated with a higher postoperative mortality rate than wound, limb, or abdomen complications.

KEYWORDS: Complications, Emergency laparotomy.

INTRODUCTION

The most common form of surgery performed worldwide is the laparotomy. Its conclusion is therefore much debated. The difficulties (complications) could arise during the procedure, immediately following it, or subsequently.

Although there are many variables that might lead to complications, the patient's pre- and post-operative conditions, surgical proficiency and technique, and post-operative care are the most crucial ones. These side effects can be as minor as a simple wound infection or strange pain at the surgical site, or they can be as serious as the patient's death or permanent disability.

The current analysis of 100 cases reveals that some patients experienced difficulties up to six months after surgery, which changed their prognosis.

These include: 1. Complications related to the abdomen; 2. Complications related to wounds; 3. Complications related to the chest; and 4. Complications related to the limbs.

The rate of complications has decreased as a result of recent developments in antibiotics, suture materials, operating technique, anaesthesia, and a better knowledge of postoperative care.

AIMS AND OBJECTIVES

- 1) To study various complications occurring following emergency laparotomies.
- 2) To study various factors influencing them.



METHODS

The Department of General Surgery at a tertiary care teaching hospital conducted a prospective analysis involving 100 cases of emergency laparotomies between July 2020 and May 2021. Midline vertical incision was used for the operation on each patient.

Information was gathered about the clinical profile, investigations, postoperative problems, surgical details, and demographics of the patients.

Following surgery, every patient underwent at least six months of follow-up.

Inclusion and Exclusion Criteria:

Age < 16 years,

Patients with pre or postoperative diagnosis of malignant involvement of peritoneum,

Presence of ascites preoperatively,

Pregnant patients.

Primary Outcome: To study various complications occurring following emergency laparotomies

Assessment and Follow-Up: All patients followed up at least for a period of 6 months after surgery.

COMMON COMPLICATION:

- 1) **Abdominal complications:** vomiting, paralytic ileus, intestinal obstruction, peritonitis, faecal fistula, urinary infections and diarrhea.
- 2) **Wound complications:** wound sepsis followed by stitch abscess, burst abdomen, incisional hernia, wound hematoma and hypertrophic scar.
- 3) **Chest complications:** pleural effusion, pulmonary embolism, atelectasis and pulmonary oedema.
- 4) **Limb complication:** deep vein thrombosis.

DATA COLLECTION AND ANALYSIS:

60 patients developed one or more complications postoperatively, 19 (31.7%) patients had abdominal complications; 34 (56.7%) had wound complications, 12 (20%) had chest complications and 4 (6.7%) had limb complications (Table 1).

Complications	No. of Pts (n=60)	Percentage %
Abdominal	19	31.7
Wound	34	56.7
Chest	12	20
Limb	4	6.7



Factors	Total Patients (n=100)	Patients Complications with (n=60)	Percentage %
Age	(16-30 years)	41	13 (32.5)
	(31-45 years)	23	18 (78)
	(46-60 years)	23	18 (78)
	(>60 years)	13	11 (84.6)
Comorbidities	48	34 (70.8)	
Malnutrition	64	50 (78)	
Immunosuppression	4	3 (75)	

RESULTS AND DISCUSSION

60 patients developed one or more complications postoperatively, 19 (31.7%) patients had abdominal complications; 34 (56.7%) had wound complications; 12 (20%) had chest complications and 4 (6.7%) had limb complications

Maximum number of cases (41) are from age group of 16-30 years & least complication rate (32.5%) was found in this group (Table 2). Whereas highest complication rate was found in >60 years age group (84.6%).

Females developed more complications (61%) compared to males (59%) in our study, though male patients (74%) outnumbered female patients (26%).

Among the 100 patients who required emergency laparotomy, 53% patients had peritonitis, 18% had hemoperitoneum, 11% had intestinal obstruction and 2% had acute appendicitis.

48 patients had comorbidities in this study. Complication rate in this group of cases are high (70.8%) as compared to cases without comorbid conditions (34.6%).



Malnutrition (anaemia, hypo proteinemia) was present in 64 patients, out of which 50 (78%) developed complications.

4 patients were on long term steroid therapy, 3 (75%) patients developed complications.

Patients operated in emergency for intestinal obstruction (82%) developed more complications compared to patients operated for peritonitis, hemoperitoneum and acute appendicitis.

Among the Abdominal complications, 5 patients had persistent vomiting, 3 had paralytic ileus, 3 had intestinal obstruction, 3 had peritonitis, 2 had faecal fistula, 2 had urinary infections and 1 patient had diarrhea.

Among wound complications, wound sepsis was the commonest complication (14), followed by stitch abscess (8), burst abdomen (7), incisional hernia (3), wound hematoma (1) and hypertrophic scar (1).

Among the chest complications; 6 patients had pleural effusion, 3 had pulmonary embolism, 2 had atelectasis and 1 had pulmonary edema.

4 Patient had limb complication, in form of deep vein thrombosis.

Abdominal complications of our study are compared to study done by Brijesh singh et al.

Chest complications of our study are compared with that of Chandrashekhar . S et al.

In our study wound complication rate was considerably lower and limb complication rate was higher than other two studies.

Amongst 60 patients who developed complications, 51 patients (85%) had only one complication and 9(15%) had more than one complications.

In our study Mortality was 7 %. Out of this two patients died from chest and wound complications. One patient died due to abdominal complication and rest four died due to chest complication.

Mortality rate (7%) in our study was lower as compared to Brijesh singh et al (13%) and Chandrashekhar S. et al (23%).

CONCLUSIONS

A considerable risk of morbidity and mortality exists with emergency laparotomy even with the availability of advanced experimental tools, broad range antibiotics, and effective anaesthesia.

The main factors affecting the outcome of surgery include immunosuppression, comorbidities, age, and malnourishment.

Appropriate pre-, intra-, and post-operative care can reduce complications.

When compared to problems involving the abdomen, wounds, and limbs, complications involving the chest had a higher postoperative death rate.

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