ORIGINAL ARTICLE

Postoperative Complications in Emergency Laparotomies at Bahawal Victoria Hospital, Bahawalpur

SOHAIL HAMEED CHAUDHARY, MUHAMMAD RIZWAN HAFEEZ*, SADIA HAFEEZ

ABSTRACT

Aim: To evaluate the postoperative complications in emergency laparotomies at Bahawal Victoria Hospital, Bahawalpur.

Methods: This comparative cross-sectional study was carried out at the Department of Surgery, Bahawal Victoria Hospital, Bahawalpur from January 2008 to December 2008.Three hundred and twenty patients undergoing laparotomy were included in this study. They were followed up meticulously and the postoperative complications/sequel was recorded.

Results: Post-operative complications were seen in 287(89.7%) patients out of 320 patients. Post-operative fever was 73(22.8%), wound infection 71(22.2%) and vomiting 45(14%), wound dehiscence 17(5.3%), incisional hernia 9(2.8%), pneumonia/anastomotic disruption 10(3.1%). The septicaemia was seen in 18(5.6%) and mortality in 24(7.5%). Conclusion: The postoperative complications are more common in emergency laparotomies. Postoperative fever, wound infection, nausea and vomiting are the mostly encountered complications.

Keywords: Laparotomy, emergency, postoperative, complications

INTRODUCTION

Laparotomy is a most common surgical procedure done by routine surgical team. Daily at least one or two or even more up to number of ten laparotomies are doing at BV hospital (referral center) hospital, Bahawalpur. So its outcome is greatly discussed and seen almost every day. Its negative outcome in any aspect is thought to be post-operative complication, either on the behalf of surgeon or a patient. There are many indications for laparotomy which may be acute for emergency laparotomies and chronic for elective laparotomies usually. But its role remains the same that is lifesaving. In surgical language the word laparotomy explains exploration of the abdomen and proceed further according to the cause identified[1]. There is no surgical procedure in this world free from complication. Either minor or major complications matter with mortality and morbidity[2]. A healthy outcome is needed on both sides but a cascade of complications may face even on a simple procedure. Many things may cause the complications but most important ones are patient's condition himself, technique and surgical expertise, pre and post-operative care etc. These complications range from simple wound infection or unusual pain at operation site to the extremes like death or permanent handicapping of the patient[3]. The only aim to minimize the risk of complication is to provide optimize and justify health care process to the patient. Although the principles of surgery remain the same. Our study showed the post-operative complication in the form of outcome in emergency laparotomies. In order to decreased the morbidity and mortality associated with laparotomy and provided an opportunity to early detect and prompt management of post-operative complication.

Department of Surgery & Medicine, Quaid-e-Azam Medical College/B.V. Hospital, Bahawalpur*
Correspondence to Dr. Sohail Hameed Chaudhary Consultant Surgeon, 68/A Trust Colony Bahawalpur

PATIENTS AND METHODS

This descriptive study was conducted at the B.V. Hospital, Bahawalpur from January 2008 to December 2008, which is a 1410 bedded hospital located in the remote Southern area of Punjab, is referral hospital of this area also, with limited health care facilities. Three hundred twenty consecutive cases, irrespective of the age and sex, undergoing laparotomy, were included in the study after written informed written consent after counselling regarding the condition of the patient and the possible outcomes. Cases in which laparotomy was done secondary to appendectomy, cholecystectomy and hysterectomy were not included. All the cases were initially visited in the OPD/ emergency and later referred for surgical consultation. A detailed history and clinical examination was conducted. The data was noted on a predesigned proforma. Baseline investigations like complete blood count, urinalysis, serum urea/ creatinine, serum electrolytes, CXR, electrocardiograph, hepatitis B and C profile, blood grouping and blood sugar (random) were noted. Abdominal radiographs and ultrasonography of

abdomen was also done where required. After initial conservative management including IV fluid resuscitation with ringer's lactate solution/foley catheterization/nasogastric intubation, pre-anaesthetic assessment was made.

Under general anesthesia the operative field was prepared with povidone iodine and all the patients were opened through a midline abdominal incision with No. 20 blade. The surgical procedure was conducted according to the requirement of the underlying disease. After dealing with the primary pathology a thorough peritoneal lavage was performed with 12 liters of normal saline. Two drains were placed in the peritoneal cavity using Nelton catheter and brought out through separate stab incisions. The wounds were closed accordingly. The patients were kept on injectable intravenously antibiotics.

The post-operative complications were noted. Persistent postoperative fever (>48 hrs), post-operative nausea and vomiting (PONV) etc were monitored regularly. Examination of the wound was started from second postoperative day. The clinical signs of redness, oedema, serosanguinous discharge, and presence of pus ordischarge of intestinal contents (enterocutaneous fistula) were noted. The stomal orifices (colostomy/ileostomy) were inspected from the first postoperative day and monitored regularly. The abdomen was also examined for early detection of any leakage from the site of intestinal repair. The 30 day mortality was recorded. The late complications like incisional hernia formation and post-operative adhesive intestinal obstruction were noted for 3-6 months after surgery. Data was analyzed with the help of SPSS-10. Descriptive statistics of patients were analyzed. Frequencies of different surgeries performed and post-operative complications were noted.

RESULTS

A total of 320 cases were included in this study who were underwent emergency laparotomies. 170(53.13%) were males and 150(46.88%) were females. The age ranged between 12–80 years (35.6±16.4 years). The majority 198(61.9%) of cases were of Acute Abdomen/Acute Peritonitis, while others were Acute Intestinal Obstruction 84(26.25%), Abdominal Trauma 38(11.85%). Acute perforated appendicitis 51(23.7%) was the leading causes of acute abdomen followed by ruptured ectopic pregnancy 35(17.6%) and perforated duodenal ulcer 34(17.1%). While intestinal tuberculosis was the leading 42(50%) cause of acute intestinal obstruction followed by volvulus 21(25%) and bands/adhesions 15(17.86%). Gunshot acute abdomen was the leading cause of abdominal trauma 19(50%) followed by traumatic perforation 7(18.4%). Sigmoid volvulus, gunshot wound abdomen with rectal injury and sigmoid perforation with faecal peritonitis had suffered from wound infection. Later, one of these developed incisional hernia, while the one case of incisional hernia was noted in with intestinal tuberculosis (Table 1).Percentages and number of complications in emergency laparotomies can be well observed in table 2.

Table 1: Emergency laparotomies n=320

Diagnosis	**n (%)**
Acute abdomen/ acute peritonitis	**198(61.9%)**
Acute Perforated Appendicitis	51(25.8)
Ruptured Ectopic Pregnancy	35(17.6)
Perforated Duodenal Ulcer	34(17.1)
Torsion/ Ruptured Ovarian Cyst	29(14.6)
Mesenteric Vascular Occlusion	9(4.5)
Primary Peritonitis	11(5.6)
Enteric Perforation	14(7)
Uterine Rupture with intra-uterine death	7(3.5)
Others	8(4)
Acute intestinal obstruction	**84(26.25%)**
Bands/ Adhesions	15(17.9)
Carcinoma Colon/ Metastatic Abdominal Tumour	5(6)
Intestinal Tuberculosis	42(50)
Volvulus (Sigmoid/ Caecal)	21(25)
Internal Hernia	1(1.1)
Abdominal trauma	**38 (11.85%)**
Traumatic Ileal/ Jejunal Perforation	9(23.7)
Gun Shot Wound Abdomen	19(50)
Traumatic Sigmoid Perforation	7(18.4)
Splenic Rupture	1 (2.6)
ParanephricHaematoma	1 (2.6)
Pelvic Haematoma (Polytrauma/ Head Injury)	1 (2.6)

Table 2: Complications in Emergency Laparotomies (n=320)

Complications	**n=**	**%age**
Postoperative Fever	73	22.8
Wound Infection	71	22.2
Postoperative nausea and Vomiting	45	14.0
Mortality	24	7.5
Septicemia	18	5.6
Wound dehiscence	17	5.3
Pneumonia	10	3.1
Incisional Hernia	9	2.8
Anastomotic Dehiscence	8	2.5
Peristomal Excoriation	5	1.6
Duodenal Fistula	4	1.25
Adhesive Intestinal Obstruction	3	0.9
Total patients with complications	287	89.7

DISCUSSION

The emergency laparotomy for acute abdomen is a major test of the surgical skills of a surgeon. Postoperative care is as essential as the preoperative preparation for a successful outcome. Deficient care in either may produce unsatisfactory results irrespective of the standard of surgery[4]. Main aim of meticulous postoperative care is early detection and immediate treatment of postoperative complications. In our study, total 320 emergency laparotomies were performed and post-operative complications were found in 287(89.7%) cases. The most common post-operative complication is post-operative fever which was found in 73(22.8%) cases, the same result is found at one study where showing post-operative fever as most common complication as 21.6%[5] which is in favor of my study, another study of Jawad et al[6] also documented post-operative fever as the commonest complication at 18.2%. Postoperative nausea and vomiting is also a common complication, in this study post-operative postoperative nausea and vomiting was found in 45(14%), Murtaza et al[5] also in favor of this result in at one recent study on laparotomies.

Postoperative wound infections have a major contribution to the postoperative morbidity of the patients.[7] In our study post-operative wound infection was found in 71(22.2%) patients, this value is also comparable with the study at Karachi[5] which is reporting wound infection in 21.6% patients, another study of Karachi by Memon Z et al[8] also documented wound infection in 21.5% cases, same result is from India where the percentage of wound infection as 24.2%[9].

Wound dehiscence/burst abdomen is a very serious postoperative complication associated with high morbidity and mortality. It has a significant impact on health care cost both for the patient and the hospital.[10]Nationally results from studies Waqaret al[10] Buhler et al[11]. Afzal S et al[12] were showing percentage of wound dehiscence as 8.13% while in an international study documented wound dehiscence is 0.43%[13]. In our study the wound dehiscence was 17(5.3%) in emergency laparotomy. A high percentage of burst abdomen in emergency laparotomy in our setup is due to many factors mainly patients poor hygiene and co-morbidity, not up to the high level equipment and facility in emergency and no doubt the underline disease pathology found per operatively.

Incisional hernia is a common and often debilitating complication after laparotomy. Despite significant advances in many areas of surgery, correction of incisional hernias continues to be problematic, with recurrence rates ranging from 5% to 63% depending on the type of repair used. Recurrence rates are likely underestimated because of a lack of long-term follow-up and objective criteria in the literature to determine true recurrence. More than 2 million laparotomies are performed annually in the United States, with a reported 2% to 11% incidence of incisional hernia[14-16]. In present study incisional hernia was found in 9(2.8%) patients which is close to with the results of Murtaza et al[5] showing incisional hernia in 3.6% patients and 2.77% in different studies on laparotomies[17].

Postoperative pulmonary complications (PPCs) occur with a frequency equal to or greater than cardiac complications and may be more likely than cardiac complications to predict long-term mortality after surgery[18]. The overall incidence of PPCs has been estimated at 5–10% in the literature. It has ranged from 20 to 69% for atelectasis, and from 9 to 40% for postoperative pneumonia[19]. In my study patients found with post-operative Pneumonia 10 (3.1%). A national study by Soomro AG et al[20] reported post-operative Pneumonia as 4.2% this value is comparable with this study. Another study of Smith PR et al[21] reported post-operative pneumonia in 6(1.67%) patients.

Essentially emergency laparotomy is performed for life saving purpose even than mortality cannot be excluded due to one or the other reason. The only goal to minimize mortality rate by utmost efforts. In my study mortality rate is 7.5%, however it is seen variedly from 3.6%to 41.7% in literature. Almost all Mortality have had septicemia. As we already know septicemia kill the patients. Septicemia because of intra-abdominal infection leads to 80% mortality.[22] A study by Soomro AG et al[20] reported 2.8% mortality at Karachi a lower than our study mortality rate. It is probably due to our study consist of emergency laparotomies for life saving only as compare to elective surgeries.

CONCLUSION

The postoperative complications like post-operative fever, wound infection, incisional hernia are the most common after emergency laparotomies. The commonest problems are the postoperative fever, wound infection and postoperative nausea and vomiting. The local wound complications apart from wound infections are the wound dehiscence and incisional hernia, which directly affect the outcome of the disease.

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