

POST-OPERATIVE COMPLICATIONS IN A GENERAL SURGICAL WARD OF A TEACHING HOSPITAL

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ABSTRACT

Objective: To find out post-operative complications during hospital stay of patients in a general surgical ward at a tertiary care teaching hospital of Karachi.

Design: Descriptive retrospective analysis.

Setting: Surgical Unit IV, Civil Hospital Karachi.

Duration: Six months, from January 1, 2004 to June 30, 2004.

Patients and Methods: The records of all patients who underwent surgery between January 2004 to June 2004 were reviewed regarding postoperative complications developed during hospital stay. The following data were collected: age, sex, presentation at time of surgery (emergency or elective), surgery performed, complications during postoperative period and outcome. All data was analyzed with the help of SPSS-10.

Main Outcome Measures: Surgery performed, post operative complications.

Results: A total of 501 patients were admitted during the study period. Total 411 surgeries were performed. 258 (62.8%) were elective and 153 (37.2%) were emergency procedures. Hernia repair was the most common surgery performed in 92 (22.4%) patients, followed by appendectomy in 64 (15.6%) and cholecystectomy in 54 (13.2%) patients. Complications were documented in 122 (29.6%) patients. Most common complication observed was postoperative pyrexia in 75 (18.2%) patients, followed by postoperative nausea and vomiting (PONV) in 48 (11.6%), wound infection in 47 (11.4%), respiratory tract infection in 29 (7.0%) patients. During the study period 4 patients (0.9%) died in the postoperative period.

Conclusion: This study revealed that the commonest postoperative complication was fever followed by PONV, wound infection and respiratory tract infection. It is important that the resident staff should be aware of these complications and how to manage them because these are better yardstick to measure the quality of care.

KEY WORDS: Post-operative complications, postoperative fever, postoperative nausea and vomiting, wound infection.

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INTRODUCTION

Surgical complications can occur after any operation and will keep on occurring. The surgeons should be intellectually honest and tackle the complications with wisdom.¹ Postoperative complication may be defined as any negative outcome as perceived either by the surgeon or by the patient.² It may occur intraoperatively, in the immediate postoperative period, or later on.

This study was conducted to find out different postoperative complications in a general surgical ward so that effective

measures could be suggested to reduce these complications. Adverse events that are closely related to processes of care, such as postoperative complications, may be a better measure of quality than death rates or other intermediate outcomes.³

PATIENTS AND METHODS

Records of all patients who underwent either elective or emergency surgical procedure during the study period from January 1, 2004 to June 30, 2004 were reviewed regarding post operative complications. Patients who were admitted but no surgery was performed were excluded. The data recorded included age, sex, presentation at time of surgery (emergency or elective), surgery performed, complications during postoperative period and outcome. 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

Five hundred and one patients were admitted during six months period. Total 411 surgeries were performed which included 258 (62.8%) elective and 153 (37.2%) emergency procedures. Most common surgical procedure done was hernia repair in 92 (22.4%) patients. Appendicectomy was performed in 64 (15.6%), explorative laprotomy in 56 (13.6%) and cholecystectomy in 54 (13.4%) of patients. Out of 54 cholecystectomies, 13 (3.2%) were open cholecystectomy and 41 (10.0%) were laproscopic cholecystectomy. Different surgeries performed are shown in Table-I.

Complications were found in 122 (29.6%) of patients. Most of the complications occurred after emergency surgeries, 75 (61.5%) as compared to 47 (38.5%) elective procedures. Most common complication observed was post-operative pyrexia in 75 (18.2%) patients followed by postoperative nausea and vomiting (PONV) in 48 (11.6%), wound infection in 47 (11.4%), respiratory tract infection in 29 (7.0%) patients. One patient developed fecal fistula while one patient developed wound

Table-I: Surgeries performed during six month period

<i>Operations</i>	<i>Number of Patients</i>	<i>Percentage</i>
Hernial repair	92	22.4
Appendicectomy	64	15.6
Laparotomy	56	13.6
Cholecystectomy	54	13.2
Incision & Drainage	39	9.5
Ano-rectal surgery	33	8.0
Thyroidectomy	20	4.9
Breast Surgery	14	3.4
Testicular and scrotal surgery	12	2.9
Chest tube intubation	4	1.0
Splenectomy	2	0.5
Miscellaneous surgeries	21	5.1
<i>Total</i>	<i>411</i>	<i>100.0</i>

dehiscence. Four (0.9%) patients died postoperatively during the study period while in the hospital. All complications are shown in Table-II. Venous thromboembolic (VTE) complications like deep vein thrombosis (DVT) and pulmonary embolism (PE) were not observed in any of the patient.

DISCUSSION

Careful postoperative care is as essential as preoperative preparation for a successful outcome of surgery. Deficient care in either may produce an unsatisfactory outcome, irrespective of the standard of the surgery.⁴ The main aim of postoperative care is prevention, early identification, and treatment of postoperative complications.

Fever is common among postoperative patients.^{5,6} In our study the most frequent complication observed was postoperative fever in 75 (18.2%) patients. Most early postoperative fever (Temperature above 38°C (100.4°F) during 48 hours or more) is caused by the inflammatory stimulus of surgery and resolves spontaneously.^{7,8} However, postoperative fevers can also be a manifestation of a serious complication. Pyrexia within 48 hours of surgery is often due to pulmonary atelectasis. Between 48 hours and five days, pyrexia may be the result of thrombophlebitis or infection of the urinary tract or the chest, and, more than five days after surgery, a wound infection or anastomotic breakdown should be

Table II: Postoperative complications during the six months period (n = 122)

Complications	Number of patients	Percentage
Postoperative fever	75	18.2
Postoperative Nausea Vomiting	48	11.6
Wound Infection	47	11.4
Respiratory tract infection	29	7.0
Prolonged paralytic ileus	12	2.9
Spinal Headache	9	2.2
Wound hematoma	4	0.9
Septicaemia	3	0.7
Ileostomy related	2	0.4
Intra abdominal bleeding	1	0.2
Wound Dehiscence	1	0.2
Faecal Fistula	1	0.2
Myocardial Infarction	1	0.2
Death	4	0.9
Miscellaneous	23	5.6

* Many patients suffered from more than one complications

suspected.⁹ Between 7 to 10 days Deep venous thrombosis and Pulmonary Embolus were the common causes. A study in critically ill surgical patients showed that 26% of patients developed postoperative fever.¹⁰

Postoperative nausea and vomiting (PONV) are among the most common adverse events after surgery and anaesthesia.¹¹ Compared with other postoperative complications like wound infection, deep vein thrombosis, PONV is of minor medical importance; it almost never kills. However, PONV may be very distressing for patients. The overall incidence of PONV is about 30 percent but can be as high as 70 percent in high-risk patients.¹² Most episodes of postoperative nausea and vomiting resolve within 24 hours. In our study 48 (11.6%) of patients suffered from PONV after 24 hours of surgery.

Wound infection is a well recognized complication of surgical treatment and sometimes places a high burden on hospital resources.¹³ It is the most common nosocomial infection, accounting for 38% of all such infections.¹⁴ In our study wound infection occurred in 11.4% of patients. A study from Saudi Arabia¹² recorded an overall infection rate of 9% while another study¹⁵ from the same country showed infection rate of 1.38%.

Postoperative pulmonary complications are common and a major cause of overall perioperative morbidity and mortality.^{16,17} Twenty nine (7.0%) patients in our study developed respiratory tract infection. After surgery different areas of the gastrointestinal tract resume function at different times. The small bowel is affected only transiently whereas the stomach can take from 24-48 hours to recover.¹⁸ The colon takes the longest to resume normal motility patterns, requiring 48-72 hours.¹⁸ If postoperative ileus lasts longer than 3 days, it is thought to be complicated, and may be termed postoperative paralytic ileus.¹⁹ In our study 2.9% of patients developed this complication. Chang et al.²⁰ reported that postoperative ileus was the most common minor complication, affecting 18% of patients after radical cystectomy.

Wound dehiscence is an acute wound failure. It has an incidence of 2% and an associated mortality of 25%.²¹ It commonly presents with serosanguinous discharge from the wound in the first week of surgery. Pavlidis et al.²² has reported that abdominal wound dehiscence occurred in 89 cases out of 19,206 major abdominal operations (0.5%). In our study this complication occurred in one patient.

Myocardial infarction is the most common cause of morbidity and mortality in patients who have had non-cardiac surgery.²³ During the study period one of our patient (60 years old) developed myocardial infarction after laprotomy for intestinal obstruction, who was then shifted to cardiology ward. The mortality among patients with perioperative infarction ranges from 36 to 70 percent.^{24,25} Lindenauer et al. in a recent study showed that a large percentage of the postoperative MIs have been prevented if a β -blocker had been administered to all high risk patients around the time of surgery.²⁶

Venous thromboembolism (VTE) is considered to be a significant cause of morbidity and mortality in hospitalized patients, especially in those undergoing major surgical procedure. In the absence of prophylaxis, VTE rates as high as 25% have been reported following general

surgery.²⁷ In the United States and Europe, DVT is present in over 5 million events each year, while PE is present in over 500,000 cases.²⁸ It has been perceived to be a rare disorder in Asians.²⁹ Six general and colorectal surgical publications from the region reported an incidence of deep vein thrombosis (DVT) ranging from 3% to 28%.³⁰⁻³⁵ A study from Singapore showed that out of 227 elective surgeries one patient developed clinical DVT postoperatively while there were no cases of pulmonary embolism (PE).³⁶ A study from Japan showed that the overall incidence of PE after general surgery was 0.33% and fatal PE was 0.08%.³⁷ In our study not a single case of clinical DVT or PE was documented. No regular prophylaxis was given to the patients although all major surgeries including surgeries for colon and pancreatic malignancy were performed. Only early postoperative mobilization was encouraged for prevention of these complications.

Complications must be anticipated, and preventive actions must be taken in every surgical case. Early recognition with prompt appropriate intervention is the best way to avert progression to a potentially disastrous situation.

CONCLUSION

Complications can occur after any operation. Many complications may be prevented by thorough preoperative evaluation, sound surgical technique and careful follow-up care. Good communication and patient rapport are invaluable. Patients must be informed of all possible risks, advised on what to expect in the postoperative period, and educated in the early recognition and reporting of adverse events. Open and honest discussions of the surgical goals, careful listening to the patient's concerns and prompt intervention when complications are suspected allows the development of trust which results in patient cooperation.

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