Original Article

# Frequency of Early Postoperative Infective Complications Among Patients Undergone Surgery for Colorectal Carcinoma

Complications After Colorectal Surgery

**Farwa Tariq, Tahira Islam, Mushahida Batool and Habib Ahmad**


## ABSTRACT

**Objective:** To determine the frequency of early postoperative infective complications after colorectal surgery among patients of colorectal carcinoma.

**Study Design:** Cross-sectional study

**Place and Duration of Study:** This study was conducted at the Department of Surgery, Unit-III, Jinnah Hospital Lahore from: September 2016 to February 2017.

**Materials and Methods:** A total of 240 cases, between 18 to 60 years of both sexes with colorectal carcinoma who had undergone colorectal surgery either open or laparoscopic were included in the study. Information regarding their demographic data, presence of early post-operative infective complication and type of surgical procedure was obtained by the researcher and was recorded.

**Results:** The mean age was 39.05 $\pm$ 10.75 years with 117 (48.8%) males and 123 (51.3%) were female patients. Overall, wound infection was found in 37 (15.4%) and wound infection was not developed in 203 (84.6%). Abdominal abscess was found in 21 (8.8%) and abdominal abscess was not developed in 219 (91.3%). The frequency of wound infection was 13 (10.48%) and 24 (20.69%) among patients who had undergone laparoscopic surgery and open colorectal surgery respectively. On the other hand, frequency of abdominal abscess was 6 (4.84%) and 15 (12.93%) among patients who had undergone laparoscopic surgery and open colorectal surgery respectively. By using chi-square, it was observed that significant association was found between the occurrence of wound infection and type of surgical procedure having p-value 0.029. The occurrence of abdominal abscess was significantly associated with type of surgical procedure having p-value 0.027.

**Conclusion:** The prevalence of post-operative complications were more frequent in the open colorectal surgery group than in laparoscopic surgery group. Significant association was found between the occurrence of wound infection and type of surgical procedure. The occurrence of abdominal abscess was significantly associated with type of surgical procedure.


**Key Words:** Laparoscopic Surgery, Abdominal Abscess, Wound Infection

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## INTRODUCTION

Globally, CRC is the third most commonly diagnosed cancer in males and the second in females, with over 1.2 million new cases and 608,700 deaths estimated to have occurred in 2008.[1] Rates are substantially higher in males than in females. Global, country-specific incidence and mortality rates are available in the World Health Organization GLOBOCAN database. In the United States, both the incidence and mortality have been slowly but steadily decreasing.[2] Annually approximately 142,820 new cases of large bowel cancer are diagnosed, of which 102,480 are colon and the remainder rectal cancers.[3]

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Although some data support the view that some risk factors are more related to colon rather than to rectal cancer.[4] Environmental and genetic factors can increase the likelihood of developing CRC.[5]

The surgical techniques used to treat colorectal carcinoma are either through open resection or laparoscopic surgery but their advantage over each other for short term and long term are still under research. Postoperative infective complications cause considerable morbidity in patients who had undergone surgery for colorectal carcinoma and their frequency vary depending upon operative techniques and condition. This study was planned to record the frequency of early postoperative infective complications after colorectal surgery among patients of colorectal carcinoma so that it may help patients and surgeons while managing these cases.

## MATERIALS AND METHODS

This cross-sectional study was carried out at Department of Surgery, Unit-III, Jinnah Hospital

Lahore from: September 2016 to February 2017. A total of 240 cases, between 18 to 60 years of both sexes with colorectal carcinoma who had undergone colorectal surgery either open or laparoscopic were included in the study, whereas patients not willing to participate, patients who had cancer infiltrating to adjacent areas determined by CT scan, patients with history of prior ongoing infection determined by history for the presence of fever and medical records and those with plasma neutrophil level less than 2 x 109 / L determined by complete blood count were excluded from the study. Information regarding their demographic data, presence of early post-operative infective complication and type of surgical procedure was obtained by the researcher and was recorded. Confidentiality of the data was ensured. The data was entered and analyzed using SPSS version 17.

# RESULTS

From two hundred and forty patients, the minimum age was calculated 21 years and maximum age was 59 years with 39.05±10.75 years. There were 117 (48.8%) male patients and 123 (51.3%) were female patients. Overall, wound infection was found in 37 (15.4%) and wound infection was not developed in 203 (84.6%). Abdominal abscess was found in 21 (8.8%) and abdominal abscess was not developed in 219 (91.3%). The frequency of wound infection was 13 (10.48%) and 24 (20.69%) among patients who had undergone laparoscopic surgery and open colorectal surgery respectively. On the other hand, frequency of abdominal abscess was 6 (4.84%) and 15 (12.93%) among patients who had undergone laparoscopic surgery and open colorectal surgery respectively.

By using chi-square, it was observed that significant association was found between the occurrence of wound infection and type of surgical procedure having p-value 0.029. The occurrence of abdominal abscess was significantly associated with type of surgical procedure having p-value 0.027.

**Table No.1: Descriptive statistics of the patients (n = 240)**

| Variable | No. | % |
|---|---|---|
| Age (years) | 39.05±10.75 | |
| **Gender** | | |
| Male | 117 | 48.8 |
| Female | 123 | 51.3 |
| **Wound infection** | | |
| Yes | 37 | 15.4 |
| No | 203 | 84.6 |
| **Abdominal abscess** | | |
| Yes | 21 | 8.8 |
| No | 219 | 1.2 |
| **Type of Surgical procedure** | | |
| Laparoscopic surgery | 124 | 51.7 |
| Open colorectal surgery | 116 | 48.3 |

**Table No.2: Cross-tabulation between wound Infection and Type of Surgical Procedure**

| Wound Infection | Type of Surgical Procedure | | Total |
|---|---|---|---|
| | Laparoscopic Surgery | Open Colorectal Surgery | |
| Yes | 13 | 24 | 37 |
| No | 111 | 92 | 203 |
| Total | 124 | 116 | 240 |

Chi-Square = 4.787 D.f. = 1 P-value = 0.029

**Table No.3: Cross-tabulation between Abdominal Abscess and Type of Surgical Procedure**

| Abdominal Abscess | Type of Surgical Procedure | | Total |
|---|---|---|---|
| | Laparoscopic Surgery | Open Colorectal Surgery | |
| Yes | 6 | 15 | 21 |
| No | 118 | 101 | 219 |
| Total | 124 | 116 | 240 |

Chi-Square = 4.916 D.f. = 1 P-value = 0.027

# DISCUSSION

From two hundred and forty patients, the mean age was 39.05±10.75 years. There were 48.8% male patients and 51.3% were female patients. Overall, wound infection was found in 15.4% and wound infection was not developed in 84.6%. Abdominal abscess was found in 8.8% and abdominal abscess was not developed in 91.3%. The percentage of wound infection was 10.48% and 20.69% among patients who had undergone laparoscopic surgery and open colorectal surgery respectively. On the other hand, frequency of abdominal abscess was 4.84% and 12.93% among patients who had undergone laparoscopic surgery and open colorectal surgery respectively. Previous research showed that total fifty-six patients with age range of 14 to 70 years; thirty males and twenty six females were studied. Most of the patients were in fifth and sixth decades of their life. Only ten patients with colorectal carcinoma were in twenty-one to thirty years age group while two patients were below the age of twenty years.[6,7]

In a non- interventional descriptive study, out of 75 patients included in the series, 53 were males and 22 females, with a male to female ratio of 2.4:1. The average age of the patients was 37 years, with males being in the range of 18 to 64 years and a mean of 36 years. In females average age was 38 years with a range of 22 to 57 years and a mean of 38 years. Thirty-four patients (45.3%) were in the third decade while 15 (20%) were in the fourth decade. Overall 66 (80%) patients out of 75 were below 50.[8,9]

A study showed that about 17.1% patients developed early postoperative infective complications among patients who had undergone colorectal resection with

10.4% developing wound infection and 4% developing abdominal abscess.[10,11]

By using chi-square, it was observed that significant association was found between the occurrence of wound infection and type of surgical procedure having p-value 0.029. The occurrence of abdominal abscess was significantly associated with type of surgical procedure having p-value 0.027. Existing literature showed that the frequency of wound infection and abdominal abscess was 5.9% and 2.9% respectively among patients who had undergone laparoscopic surgery as compared to 15% and 5.3% respectively with open conventional surgery. These results were found to be statistically significant.[12,13]

In another study it was revealed that post-operative complications were more frequent in the open resection group than in LAP resection group (5.6% vs 27.8%; $P<0.05$).[12]

# CONCLUSION

The prevalence of post-operative complications were more frequent in the open colorectal surgery group than in laparoscopic surgery group. Significant association was found between the occurrence of wound infection and type of surgical procedure. The occurrence of abdominal abscess was significantly associated with type of surgical procedure.

**Author's Contribution:**

| | |
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| Concept & Design of Study: | Farwa Tariq |
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| Final Approval of version: | Farwa Tariq |

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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