



FREQUENCY OF UMBILICUS SITE PORT HERNIA AFTER LAPAROSCOPIC PROCEDURE AT TERTIARY HOSPITAL

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Abstract

Background: Laparoscopic surgery is currently one of the most efficient approaches to gynecological surgeries. While the incisional hernias with open and laparoscopic colectomies are undistinguishable.

Objective: The aim of this study was to explore the Frequency of umbilicus site port hernia after laparoscopic procedure at tertiary hospital.

Methodology: The current prospective study was carried to determine the frequency of port site hernia after laparoscopic procedures at the department of general surgery Jinnah Medical College and Hospital from July 2022 - December 2022 after taking permission from the ethical committee of the institute. A total of 544 individuals of both genders and various age groups who underwent baseline investigation and preoperative anesthetic fitness were enrolled in this study. These patients were monitored for two years following surgery, and their problems were routinely evaluated. Early post-operative problems such as wound infection and bleeding were addressed. SPSS Version 20 was used for statistical evaluation.

Results: In the current study over all 544 participants received laparoscopic procedures. Of these, there were 55(10%) diagnostic laparoscopies, 44(8%) appendectomies and 445 (81%) cholecystectomies. 9(1.6%) had a port site hernia after two years of long-term follow-up.

Conclusion: From the current study it was concluded that umbilicus site port hernia is the major side effect of laparoscopic procedure. The incidence of hernia explored in this study was 1.6%.

Key words: Frequency; umbilicus site port hernia; Laparoscopy

Introduction

Minimally invasive surgery has completely changed the surgical profession as a result of technological advancements. Laparoscopic procedures have been performed more often these days

because of its advantages and less difficulties. Compared to open procedures, it has been associated to less issues. Nevertheless, there are certain particular risks associated with laparoscopic procedures.¹ Bowel perforation or vascular damage during the early stages of this surgery can be lethal. The size of the incision is closely correlated with port site problems such as bleeding, infection, and incisional hernia.² Depending on the surgeon's expertise, the prevalence of complications following laparoscopic surgery is measured at 1.4%.³ Port site infections, cancer metastases, and pyoderma gangrenosum are infrequent adverse consequences of laparoscopic surgery.⁴ Laparoscopic surgery is currently one of the most efficient approaches to gastrointestinal, genitourinary, vascular, and gynecological surgeries.⁵ The benefits of laparoscopic surgery include reduced morbidity, quicker return to work, faster bowel function recovery, and less post-operative pain.⁶ While some research indicates that the likelihood of incisional hernias with open and laparoscopic colectomies is identical, other studies clearly demonstrates the advantages of laparoscopy.⁷ The risk of an incisional hernia is 50% in the peri-umbilical region, 19% in the paramedian and transverse regions, and 6% in the epigastric region. Fascia failure to heal as a result of wound contamination and inadequate blood supply is the fundamental mechanism behind incisional hernias. Male gender, advanced age, obesity, a weakened immune system, and the site of incision are additional risk factors linked to port site hernia.⁸ The prevalence of trocar spot hernia was determined to be between 0.5% and 2% based on a meta-analysis of 22 publications. Certain case-related characteristics were the patient's high BMI, the lengthier surgical procedure, the size of the trocar utilized, and the insertion of the pyramidal trocar.⁹ Few studies have demonstrated the safety of using one incision laparoscopic surgery for laparoscopic cholecystectomy. According to some research, when the incision is created in the periumbilical region during single incision laparoscopic surgery, there is a higher risk of trocar-associated hernia. Nevertheless, further research is required to confirm the results of laparoscopic surgery with a single incision.¹⁰ A possible consequence, a port site hernia need further surgery to close the fascial defect. However, it increases the patient's risk of infection and iatrogenic injury during surgery. So this research was conducted to determine the frequency of umbilicus site port hernia after laparoscopic procedure at tertiary hospital.

Methodology

The current prospective study was carried to determine the frequency of port site hernia after laparoscopic procedures at the department of general surgery Jinnah Medical College and Hospital from July 2022 - December 2022 after taking permission from the ethical committee of the institute. A total of 544 individuals of both genders and various age groups who underwent base line investigation and preoperative anesthetic fitness were enrolled in this study. Patients who were immunocompromised or had a BMI higher than 29 were excluded. The umbilical side was closed with a J-shaped vicryl and a 10mm trocar. These patients were monitored for two years following surgery, and their problems were routinely evaluated. Early post-operative problems such as wound infection and bleeding were addressed. SPSS Version 20 was used for statistical evaluation

Results

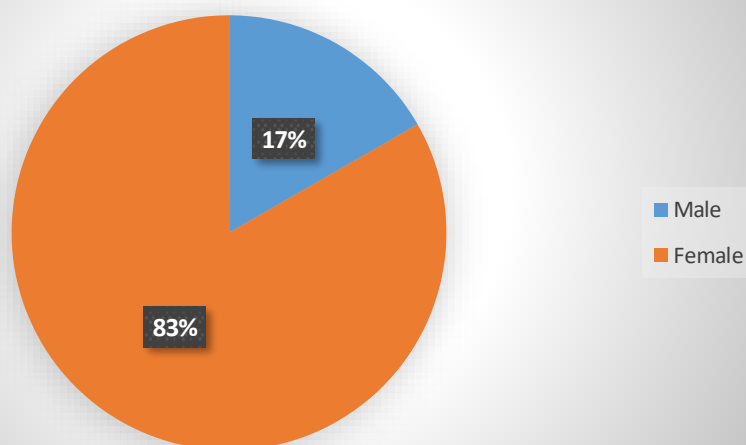
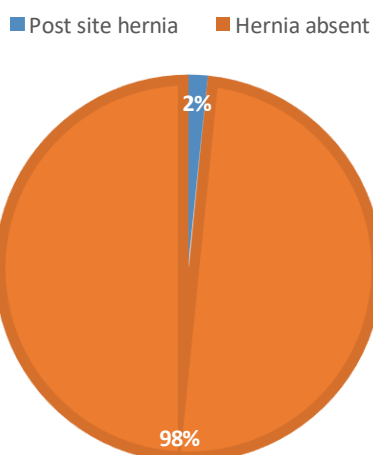
In the current study Over all 544 participants received laparoscopic procedures out of which 453(83.27%) were females and 91(16.7%) were male (**figure.1**). The most prevalent age group in the study population was 31-40years 217 (39.8%) followed by age group 20 -30 years 104(19.11%) as presented in **table 1**. Of these, there were 55(10%) diagnostic laparoscopies, 44(8%) appendicectomies, and 445(81%) cholecystectomies. Gallstone pathology was reported in 81% of the patients, and laparoscopic cholecystectomy was carried out. Diagnostic laparoscopy was done in other cases because of intestinal disease or trauma. The least common laparoscopic surgery among patients was laparoscopic appendicectomies as shown in **table 2**. 9(1.6%) had a port site hernia after two years of long-term follow-up in the study population **figure 2**.

Table 1. Age wise distribution of the study population

Age in years	N(%)
20 to 30 years	104(19.11)
31 to 40 years	217(39.88)
41 to 50 years	112(20.58)
51 to 60 years	89(16.3)
60 to 70 years	22(4.0)

Table 2. Procedure performed

Procedure carried out	N (%)
Laparoscopic Cholecystectomy	445(81%)
Laparoscopic Appendectomy	44(8%)
Diagnostic Laparoscopy	55(10%)

Figure1. Gendre wise distribution**FIGURE 2. PERCENTAGE OF POST SITE HERNIA**

Discussion

Incisional hernias are infrequent when trocars smaller than 12 mm and radially dilating trocars are used. In order to lower the risk of an incisional hernia, some studies advise using fascia in combination with sutures and performing fascial closure when trocars larger than 12 mm are being

employed during the procedure. The earliest possible treatment of a port site hernia is necessary to avoid intestinal problems such as perforation and strangling.⁹ According to a retrospective analysis of 570 patients' laparoscopic operation problems, 3% of patients experienced port site complications.¹⁰

Port site complications are 52.9% more likely to occur with laparoscopic cholecystectomy than with any other laparoscopic surgery. There is no correlation between closure approach and port site issues and the likelihood of port site issues rises as the number of ports increases.¹¹ Port site hernia development with and without fascia closure was examined, and the outcomes of the two groups were compared. There was no discernible difference between the two groups' levels of problems.¹² Port site issues & wound consequence risk cannot be adequately researched since single incision laparoscopic procedures need higher surgical competence. The more experienced the surgeon is, the lower the chance of problems.¹³

In the current study 9(1.6%) had a port site hernia after two years of long-term follow-up in the study population. However, 4.1% of patients in Erdas E's research experienced an umbilical hernia throughout the follow-up period. One of the main contributing causes to hernias was shown to be the insertion of big trocars for extraction at the umbilical site. The result was also impacted by other factors such as age, gender, obesity, pre-existing fascial abnormalities, and length of surgery.¹⁴⁻¹⁷ The risk of port site hernia must be reduced even if it is not a frequent side effect of laparoscopic surgery. Treating a port site hernia requires further surgery, which puts the patient at risk for surgical complications. Another deadly hernia consequence that has a high risk of death is obstruction or choking.¹⁸ Because the incision is enlarged to remove contents, there is a 1.6% incidence of port site hernia following laparoscopic sleeve gastrectomies. The risk rises more when trocars larger than 15 mm are used.¹⁹ To remove the stomach's contents, the incision during a laparoscopic sleeve gastrectomy was expanded to about the size of two finger tips. There appears to be an increased risk having port site infection at the stomach extraction site. Additionally, it has been discovered that port site infection raises the likelihood of port site hernia. Between 1999 and 2004, a research was carried out to examine pre-operative and peri-operative variables associated with the development of port site hernia. Both univariate and multivariate analysis were used to examine the effects of gender, BMI, length of operation, and type of cholecystitis. Following univariate analysis, it was discovered that female gender and advanced age were linked to an increased incidence of port site hernia.²⁰ According to a 2015 cohort research, 552 individuals had the same rate of port site hernia following single incision laparoscopic cholecystectomy as well as conventional laparoscopy.²¹

Conclusion

From the current study it was concluded that umbilicus site port hernia is the major side effect of laparoscopic procedure. The incidence of hernia explored in this study was 1.6%. All patients should have their risk factors for developing a port site hernia evaluated, and precautions should be taken to prevent issues.

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