

# An Assessment of Port Site Infection in Patients Underwent Laparoscopic Cholecystectomy

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## ABSTRACT

**Objective:** To assess the port site infection in patients underwent laparoscopic cholecystectomy.

**Material and methods:** The descriptive study was conducted at Department of Surgery, Sandeman Provincial Hospital Quetta from February 2021 to August 2021. Total 90 patients of gallstone, both male and female, age between 20-70 years and ASA grade II and III were recruited. All the selected patients were underwent laparoscopic cholecystectomy. All the surgeries were performed under general anesthesia. Port site infection was assessed in selected patients.

**Results:** Mean age of the patients was  $41.28 \pm 13.75$  years. Out of 90 patients of gallstone, port site infections was found in 8 (9%) patients. Two age groups (20-45 years and 46-70 years) were created. Total 55 (61.11%) patients were between 20-45 years while 35 (38.89%) patients were between 46-70 years. Port site infection was found in 4 (7.27%) and 4 (11.43%) patients respectively. Association of port site infection with age group was not significant ( $P = 0.706$ ). Males were 34 (60.71%) and females were 56 (62.22%). Port site infection was noted in 2 (5.88%) males while in 6 (10.71%) females. Association of port site infection with gender was not significant ( $P = 0.705$ ).

**Conclusion:** Results of present revealed that port site infection was developed in few patients after laparoscopic cholecystectomy. Most of the patients were between 20-45 years. Females were more victim of gallstone as compared to males. Obese and non-diabetics had not association with development of port site infection.

**Key words:** Laparoscopy, gallstone, port site infection.

## INTRODUCTION

Minimal invasive surgery or also called Laparoscopic surgery became the preferred method of operation after being introduced in the 1980s.<sup>1</sup> Now, Laparoscopic cholecystectomy (LC) is gold standard for the management of gallstones.<sup>2</sup> According to estimates, gallstones affect 10% to 15% of the population in Western countries.<sup>3</sup> In USA, about 700,000 cholecystectomies are performed every years.<sup>4</sup> Gallstones are seen in 8% of population having age >40 years and in 20% population above the age of 60 years in Pakistan.<sup>5</sup>

A laparoscopic operation has an overall rate of serious complications of about 1.4 per 1,000 procedures.<sup>6</sup> The rate of port site problems after LC, on the other hand, is believed to be around 21 per 100,000 patients, and it has risen in direct proportion to the size of the port site incision and trocar.<sup>7</sup> The most common complications or injuries after LC are gastrointestinal (0.06%), vascular (0.01%), genitourinary (0.03%) and omentum (0.01%).<sup>8</sup>

## MATERIAL AND METHODS

The descriptive study was conducted at Department of Surgery, Sandeman Provincial Hospital Quetta from February 2021 to August 2021. Total 90 patients of gallstone, both male and female, age between 20-70 years and ASA grade II and III were recruited. Pregnant women, cases of acute pancreatitis, cases of skin infections, cases with history of bleeding disorder and cases with history of peritonitis were excluded. Ethical review committee have given approval of this study. Informed consent was taken from every patient. BMI of all the patients was calculated by recording weight and height. After routine investigations, laparoscopic cholecystectomy was performed in selected patients. All the surgeries were performed under general anesthesia.

At first post-operative day, all the patients were discharged. At 5<sup>th</sup> post-operative day, all the patients were clinically evaluated for port site infections. All the wound infections were washed by using normal saline and antibiotics were prescribed and surgical dressing was done. At 7<sup>th</sup> post-operative day, stitches were removed. Findings in term of port site infection (Yes/No) was entered in pre-designed performa along with demographic profile.

SPSS version 16 was used to analyze the data. Age and BMI were presented as mean and SD. Gender, obesity (obese/non-obese), diabetes mellitus (Yes/No) and frequency of port site infection were presented in form of frequency and percentage. Port site infection was presented in form of pie chart.

## RESULTS

Mean age of the patients was  $41.28 \pm 13.75$  years. Out of 90 patients of gallstone, port site infections was found in 8 (9%) patients. (Fig. 1)

Two age groups (20-45 years and 46-70 years) created. Total 55 (61.11%) patients were between 20-45 years while 35 (38.89%) patients were between 46-70 years. Port site infection was found in 4 (7.27%) and 4 (11.43%) patients respectively. Association of port site infection with age group was not significant ( $P = 0.706$ ). (Table 1)

Males were 34 (60.71%) and females were 56 (62.22%). Port site infection was noted in 2 (5.88%) males while in 6 (10.71%) females. Association of port site infection with gender was not significant ( $P = 0.705$ ). Table 2

Obese and non-obese were 24 (26.67%) and 66 (73.33%) respectively. Total 2 (8.33%) obese and 6 (9.09%) non-obese had port site infection. Association of port site infection with obesity was not significant ( $P = 1.000$ ). (Table 3)

Diabetics were 32 (35.56%) and non-diabetics were 58 (64.44%). Total 3 (9.38%) diabetics and 5 (8.62%) non-diabetics were found with port site infection. But association was not significant ( $P = 1.000$ ) (Table 4)



Fig: Frequency of port site infection

Table 1: Association of port site infection with age group

Age group	Port site infection		Total	P value
	Yes	No		
20-45	4 (7.27)	51 (92.73)	55 (61.11)	0.706
46-70	4 (11.43)	31 (88.57)	35 (38.89)	
Total	8 (9)	82 (91)	90	

Table 2: Association of port site infection with gender

Gender	Port site infection		Total	P value
	Yes	No		
Male	2 (5.88)	32 (94.12)	34 (60.71)	0.705
Female	6 (10.71)	50 (89.29)	56 (62.22)	
Total	8 (9)	82 (91)	90	

Table 3: Association of port site infection with obesity

Obesity	Port site infection		Total	P value
	Yes	No		
Obese	2 (8.33)	22 (91.67)	24 (26.67)	1.000
Non-obese	6 (9.09)	60 (90.91)	66 (73.33)	
Total	8 (9)	82 (91)	90	

Table 4: Association of port site infection with diabetes mellitus

Diabetes mellitus	Port site infection		Total	P value
	Yes	No		
Diabetic	3 (9.38)	29 (90.62)	32 (35.56)	1.000
Non-diabetic	5 (8.62)	53 (91.38)	58 (64.44)	
Total	8 (9)	82 (91)	90	

**DISCUSSION**

Objective of the present study was to assess the port site infection in patients underwent laparoscopic cholecystectomy.

Mean age of the patients was 41.28 ± 13.75 years. Out of 90 patients of gallstone, port site infections was found in 8 (9%) patients. Two age groups (20-45 years and 46-70 years) created. Total 55 (61.11%) patients were between 20-45 years while 35 (38.89%) patients were between 46-70 years. Port site infection was found in 4 (7.27%) and 4 (11.43%) patients respectively. Association of port site infection with age group was not significant (P = 0.706). Males were 34 (60.71%) and females were 56 (62.22%). Port site infection was noted in 2 (5.88%) males while in 6 (10.71%) females. Association of port site infection with gender was not significant (P= 0.705). In study of Alam et al,<sup>8</sup> total 108 Cholecystectomies were performed (16 males and 92 females), port site infection was developed in 12 (11%) patients (1 male and 11 females). Age range was 20-75 years. Most of the patients belonged to 3<sup>rd</sup> decade. In another study by Al-Naser et al,<sup>9</sup> rate of port site infections after laparoscopic cholecystectomy was 4.5%. Most (8.9%) of the patients were males. A study by Taj et al<sup>10</sup> conducted in Islamabad, total 492 patients underwent laparoscopic cholecystectomy, total 5.48% patients found with port site infection. In study by Usman et al,<sup>11</sup> total 200 patients were operated, of which 17% males and 83% females. Total 6% patients found with port site infection. 33.33% males and 66.66% females were infected. Shindholimath et al<sup>12</sup> reported incidence of port site infection as 6.3% while Den Hoed et al<sup>13</sup> and Jan et al<sup>14</sup> reported as 5.78% and 5.07% respectively in their studies. In one study by Rehman et al,<sup>15</sup> port site infection was found in 5.5% patients after performing Cholecystectomy. In another study by Mir et al,

frequency of port site infection was 6.7%.<sup>16</sup> Similarly an Indian study reported frequency of port site infection after laparoscopic cholecystectomy as 6.4%.<sup>6</sup>

**CONCLUSION**

Results of present revealed that port site infection was developed in few patients after laparoscopic cholecystectomy. Most of the patients were between 20-45 years. Females were more victim of gallstone as compared to males. Obese and non-diabetics had not association with development of port site infection.

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