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ORIGINAL ARTICLE

Frequency of Umbilical Port Site Infection after Cholecystectomy: A Single Centre Cross-Sectional Study

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ABSTRACT

Background: Laparoscopic surgery may be used to treat cholelithiasis, pancreatic inflammation, gallbladder stones, and gallbladder tumours, often known as polyps. Due to its safety and status as the gold standard, gallbladder resection combined with a laparoscopic cholecystectomy is regarded as the preferred surgical procedure.
Objective: To determine the frequency of umbilical port site infection after cholecystectomy
Study Design: Descriptive cross-sectional study
Place and study duration: The current study was done at the Surgery Department, BMC/Bolan Medical Complex Hospital Quetta for a period of six months from Feb 2023 to July 2023.
Methods: The study was approved from the ethical committee of the hospital. A total of 100 patients participated in our study. Data were acquired by observing patients and laboratory reports; furthermore, the analysis was conducted using the newest version of SPSS 24.
Results: In our study, totally 100 patients were selected. The mean age of the patients was. The mean age of the enrolled patients was 42 (11.2) years with minimum age of 20 and maximum age of 70 years. The male patients in our study were 42 (42%) and females were 58 (58%). The frequency of port site infection after cholecystectomy was 15 (15 %). The most common of infection was umbilical port site in 9 (60 %) followed by epigastric infection in 4 (26.67 %) patients, suprapubic infection in 1 (6.67 %) patient and Palmer's point infection in 1 (6.67 %) patient.
Conclusion: Our study concludes that port site infection after cholecystectomy is a common problem. The most common complication after cholecystectomy in our study was umbilical port site infection followed by epigastric infection. Consequently, this may be reduced with appropriate aseptic methods and postoperative patient care.
Keywords: laparoscopy; cholecystectomy, post-surgical infection; suprapubic infection

INTRODUCTION:

Open gallbladder removal has almost been wiped out of medical practice since the advent of laparoscopic surgery[1]. Laparoscopic surgery may be used to treat cholelithiasis, pancreatic inflammation, gallbladder stones, and gallbladder tumours, often known as polyps[2]. Due to its safety and status as the gold standard, gallbladder resection combined with a laparoscopic cholecystectomy is regarded as the preferred surgical procedure. Although there is always a chance that something may go wrong during surgery, laparoscopic surgery greatly lowers the likelihood of issues. One of the most common problems that might occur after gall bladder removal is gall bladder rupture, which can result in bile leakage[3]. Additionally, there was enough proof of infection issues brought on by bile that leaked out and stones that were not collected[4]. A laparoscopic cholecystectomy is the surgery that general surgeons execute the most often and that calls for basic laparoscopic equipment. In addition to gallstones producing symptoms in a tiny number of cases (1-4%) every year, more than 80% of gallbladder stone instances go undetected[5]. individuals with gallstones that cause symptoms are best treated surgically, whereas individuals with gallstones that do not cause symptoms may benefit from the "keep an eye on and patiently wait" approach[6,7]. Open surgery continued to be the accepted surgical approach for gallstone treatment in the years before the laparoscopic technique was developed. In contrast, laparoscopy surgery has been the preferred surgical method for gallbladder removal currently[8,9]. because it offers many benefits, including the fact that it is a minimally invasive and very easy operation[5]. cost-effectiveness; association with a short operation time, as well as a shorter hospital stay and a quicker recovery after surgery for individuals who have had a laparoscopic cholecystectomy[6,10]. The operation may now be regarded as a nursery surgery, and patients facing difficult instances of laparoscopy for cholecystectomy are advised of postoperative morbidity[12]. Additional problems, including postoperative pain and elevated fever, ileus, and intraoperative or postoperative haemorrhage, have been documented in the medical literature after a laparoscopic cholecystectomy. These problems might arise at any time after the operation[11–12]. The incidence of bile leakage after laparoscopic cholecystectomy has been reported to range from 0.2-2 %[11]. Over the course of nine years, about 9000 cholecystectomies were performed; intraoperative bleeding occurred 2.3% of the time, gallbladder punctures occurred 15.9% of the time, and ordinary bile duct damage occurred 0.1% of the time[12].

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MATERIALS AND METHOD

Study Design: Descriptive cross-sectional study
Place and Study Duration: The current study was done at the Surgery Department, BMC/Bolan Medical Complex Hospital Quetta for a period of six months from Feb 2023 to July 2023.
Methods: The study was approved from the ethical committee of the hospital. A total of 100 patients participated in our study. Informed permission was collected from each patient, who were assured that their privacy and confidentiality would be preserved. Prior to the procedure, an ultrasound was conducted for each subject to verify their cholelithiasis. Participants exceeding the established age criteria and diagnosed with diabetes mellitus, cardiovascular diseases, hypertension, pancreatitis, or other autoimmune disorders were dropped from the study. Conversely, individuals with cholelithiasis who met the age criteria and expressed willingness to participate were included. All of the patients were five days post-operative. Data were acquired by observing patients and laboratory reports; furthermore, the analysis was conducted using the newest version of SPSS 24.

RESULTS

In our study, totally 100 patients were selected. The mean age of the patients was. The mean age of the enrolled patients was 42

(11.2) years with minimum age of 20 and maximum age of 70 years. The male patients in our study were 42 (42%) and females were 58 (58%). The frequency of port site infection after cholecystectomy was 15 (15 %). (Figure 1) Based on age wise distribution, there were 13 (13%) patients in age group 20-30 years, 30 (30%) of the individuals were from 31-40 years, 22 (22%) of the patients were from 41-50 years, 25 (25 %) were from 51-60 years of age and 10 (10%) were in age group 61-70 years. (Figure 2) The most common of infection was umbilical port site in 9 (60 %) followed by epigastric infection in 4 (26.67 %) patients, suprapubic infection in 1 (6.67 %) patient and Palmer's point infection in 1 (6.67 %) patient. (Figure 3)

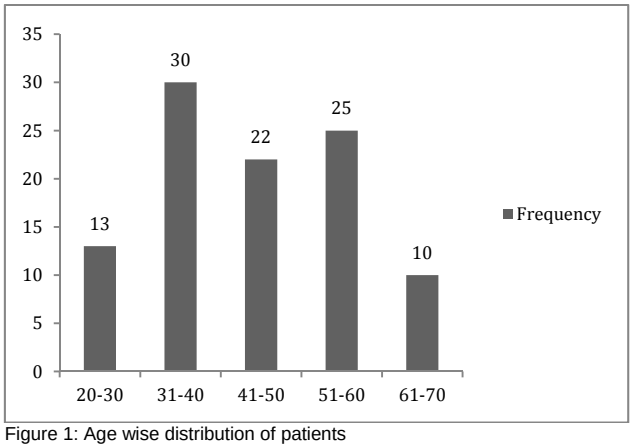

Figure 1: Age wise distribution of patients

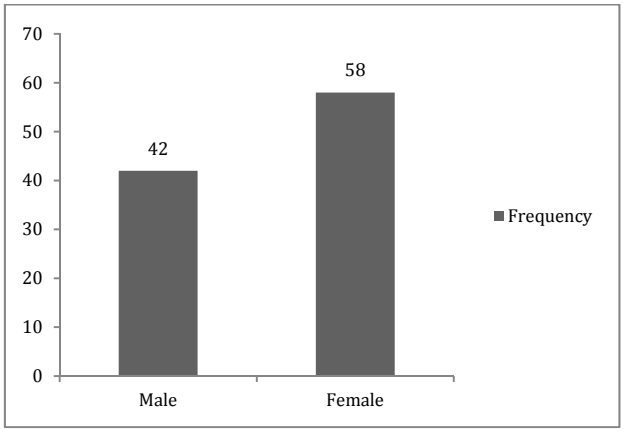

Figure 2: Distribution of patients based on gender

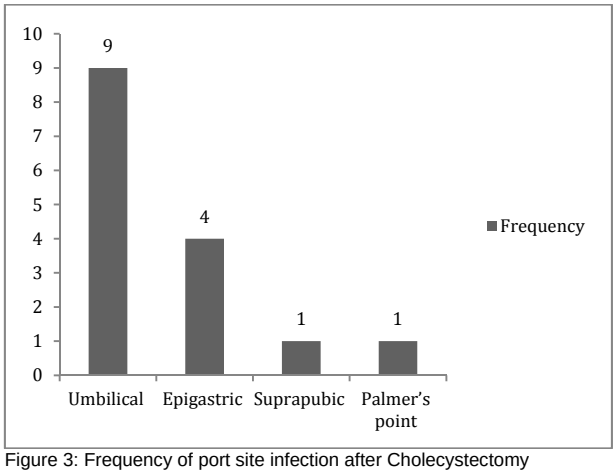

Figure 3: Frequency of port site infection after Cholecystectomy

DISCUSSION

The most successful treatment for gallstones is laparoscopic cholecystectomy, according to the majority of medical professionals[11]. This is because laparoscopic cholecystectomy offers several advantages. compared to the more traditional methods of removing the gallbladder, which result in scarring, a shorter recovery period, stay in the hospital, postoperative death, and other complications that cause patients to move about more quickly[12]. Because port site infections might have lifelong consequences, people should not disregard them as minor medical issues[13]. Both open and laparoscopic surgeries might have issues. These port site problems, which fall into two categories: postoperative complications and access-related challenges, affected both men and females and all ages[14]. In our study, totally 100 patients were selected. The mean age of the patients was. The mean age of the enrolled patients was 42 (11.2) years with minimum age of 20 and maximum age of 70 years. The male patients in our study were 42 (42%) and females were 58 (58%). The frequency of port site infection after cholecystectomy was 15 (15 %). Based on age wise distribution, there were 13 (13%) patients in age group 20-30 years, 30 (30%) of the individuals were from 31-40 years, 22 (22%) of the patients were from 41-50 years, 25 (25 %) were from 51-60 years of age and 10 (10%) were in age group 61-70 years. A comparable research by Shaikh B et al. shown that infection may vary according on the orifice used for sample collection. The epigastric port had the greatest infection rate at 58%, followed by the umbilical port with a rate of 42%[17].The most common of infection was umbilical port site in 9 (60 %) followed by epigastric infection in 4 (26.67 %) patients, suprapubic infection in 1 (6.67 %) patient and Palmer's point infection in 1 (6.67 %) patient.

According to another similar research by Ali J, the percentage of female patients was statistically significantly correlated with the total number of antibiotic treatments needed, and the incidence of infection at the port site was 5.3%[18]. According to a research by Ravindranath GG et al., 21 patients (6.4%) had an infection at the port site. 32 persons in all, 16 of whom were female (7%) and 5 of them were male (5.1%). Eight (38.1%) infections spread across the epigastric area, whereas eleven (52.4%) infections occurred in the umbilical region[19]. According to a research by Dalwani AG et al., there were 84.5% females and 15.5% males in the gender distribution. After exhibiting signs of cholelithiasis, the majority of subjects (93.0%) had cholecystectomy. Port-site infections were shown to be a frequent complication among the patients, affecting 14.1% of them. Furthermore, 26.7% of individuals developed difficulties, making the infra-umbilical site the most often impacted area[20].

CONCLUSION

Our study concludes that port site infection after cholecystectomy is a common problem. The most common complication after cholecystectomy in our study was umbilical port site infection followed by epigastric infection. Consequently, this may be reduced with appropriate aseptic methods and postoperative patient care.

REFERENCES

1 ur Rehman H, Siddiqa M, Ul Munam A, Khan S. Frequency of port site wound infection after gall bladder removal with or without retrieval bag in laparoscopic cholecystectomy. JPMA. 2020;70(1533).
2 Hassler KR, Collins JT, Philip K, Jones MW. Laparoscopic cholecystectomy. InStatPearls [Internet] 2022 Apr 13. StatPearls Publishing.
3 Saini S, Saini MK. A study of port site complications after laparoscopic cholecystectomies at tertiary care hospital in western Rajasthan. International Journal of Medical and Biomedical Studies. 2019;3(7).
4 Sathesh-Kumar T, Saklani AP, Vinayagam R, Blackett RL. Spilled gall stones during laparoscopic cholecystectomy: a review of the literature. Postgraduate medical journal. 2004 Feb;80(940):77-9.

5 Gupta AK, Shiwach N, Gupta S, Gupta S, Goel A, Bhagat TS. Predicting difficult laparoscopic cholecystectomy. International Surgery Journal. 2018 Feb 26;5(3):1094-9.

6 Ahmed N, Main MA, Zaidi SH, Inam S, Rehmani JA. Association of iatrogenic gall bladder perforation in laparoscopic cholecystectomy with harmonic scalpel and electrosurgical cautery. Pakistan Armed Forces Medical Journal. 2013 Mar 31;63(1):64-7.

7 Qazi M, Shah RU, Shah S, Shiraz DA, Ullah HN, Kalim M. Outcome of laparoscopic cholecystectomy in terms of complications in Lady Reading Hospital Peshawar. The Professional Medical Journal. 2022 May 31;29(06):859-63.

8 Al Masri S, Shaib Y, Edelbi M, Tamim H, Jamali F, Batley N, Faraj W, Hallal A. Predicting conversion from laparoscopic to open cholecystectomy: a single institution retrospective study. World journal of surgery. 2018 Aug;42:2373-82.

9 Usuba T, Nyumura Y, Takano Y, Iino T, Hanyu N. Clinical outcomes of laparoscopic cholecystectomy with accidental gallbladder perforation. Asian Journal of Endoscopic Surgery. 2017 May;10(2):162-5.

10 Teimuri A, Mami M, Ghofrani H, Daryani NE, Khosravi A, Alborzi F. Dropped gallstones during laparoscopic cholecystectomy. Govaresh. 2014 Mar 29;19(1):66-8.

11 Pavlidis TE, Atmatzidis KS, Papaziogas BT, Galanis IN, Koutelidakis IM, Papaziogas TB. Biloma after laparoscopic cholecystectomy. Annals of Gastroenterology. 2002.

12 Duca S, Bala O, Al-Hajjar N, Iancu C, Puia IC, Munteanu D, Graur F. Laparoscopic cholecystectomy: incidents and complications. A retrospective analysis of 9542 consecutive laparoscopic operations. Hpb. 2003 Aug;5(3):152-8.

13 Atta HM, Mohamed AA, Sewefy AM, Abdel-Fatah AF, Mohammed MM, Atiya AM. Difficult laparoscopic cholecystectomy and trainees: predictors and results in an academic teaching hospital. Gastroenterology research and practice. 2017 Jun 5;2017.

14 Zulfikaroglu B, Ozalp N, Mahir Ozmen M, Koc M. What happens to the lost gallstone during laparoscopic cholecystectomy?. Surgical Endoscopy. 2003 Jan;17(1):158-.

15 Paudel SR, Gurung NV, Adhikari DB, Acharya A, Shrestha S, Gurung A, Shrestha D, Paudel AG. Incidence of Superficial Port Site Infection in Laparoscopic Cholecystectomy in relation to Spilt Stone and Bile Spillage. Medical Journal of Pokhara Academy of Health Sciences. 2018 Jun 30;1(1).

16 Karthik S, Augustine AJ, Shibumon MM, Pai MV. Analysis of laparoscopic port site complications: A descriptive study. Journal of minimal access surgery. 2013 Apr;9(2):59.

17 Shaikh B, Baloch I, Shah AA, Mirani AS, Lund PL, Valbani J, Azhar N, Athar S. Frequency of port site infection following gall bladder removal through Epigastric vs Umbilical port. The Professional Medical Journal. 2021 Mar 10;28(03):277-81.

18 Ali J. Port site infection and associated factors in laparoscopic cholecystectomy. Journal of Surgery Pakistan. 2022 Jun 27;27(2):55-9.

19 Ravindranath GG, Reddy SR. Laparoscopic port site complications: a study in a tertiary care centre. International Surgery Journal. 2016 Dec 9;3(3):1121-4.

20 Dalwani AG. Postoperative port site early complications of laparoscopic cholecystectomy. Journal of Surgery Pakistan. 2021 Dec 6;26(2):79-83.

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