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Original Research Paper

General Surgery

A STUDY ON PORT SITE COMPLICATIONS IN PATIENTS UNDERGOING CONVENTIONAL LAPAROSCOPIC CHOLECYSTECTOMY

Dr Sukriti Gupta* Junior resident, department of general surgery, Smt kashibai navale medical college and general hospital,Pune, Maharashtra. *Corresponding Author

Dr S. N. Purandare Professor and head of unit, Department of surgery, Smt kashibai navale medical college and general hospital, Purandare Hospitals, swargate, Pune, Maharashtra.

ABSTRACT

Background Laparoscopic surgeries are being frequently performed. Although these surgeries are relatively safe, they have their own set of laparoscopic complications. Port site complications are most common cause of morbidity following laparoscopic surgery.

Methods 70 patients who underwent laparoscopic cholecystectomy were enrolled in this study. They were followed up for 90 days. The port sites were examined thoroughly at every hospital visit for the presence of any complications.

Results Out of 70 patients only 2 developed port site infection. There was no evidence of port site hernia, bleeding, collection or purulent discharge in this study. The only complication was superficial skin infection at the epigastric port from where the gall bladder was extracted.

Since only 2 patients developed complications, it was considered to be insignificant.

Conclusion It was concluded that laparoscopic cholecystectomy is a safe and effective procedure with minimal port site complications.

KEYWORDS : Laparoscopic cholecystectomy, port site infection.

BACKGROUND

Cholecystectomy is the most common laparoscopic operation of the biliary tract and it is one of the most common operative procedure being performed nowadays [4]

Laparoscopic techniques have revolutionised the field of surgery. There are many benefits of laparoscopic surgery. These include decreased postoperative pain, quicker return to normal activity, less post-operative complications, decreased incidence of sepsis and faster return to normal activity. Although it is a safe and effective procedure and offers several benefits compared to the open procedure, it also has its own set of complications. Complications include those of laparoscopy (abdominal vessel injury, gastrointestinal perforation, bladder perforation, solid visceral injury, and infection) and those of cholecystectomy (gallbladder fossa bleeding, bile duct injury, bile leakage, and infection. [1]

AIM

This study was conducted to evaluate the complications occurring at the port site. The complications included were- port site hernias, surgical site infection, port site discharge and wound dehiscence.

METHODS AND MATERIALS

This was a prospective study conducted in a tertiary care centre from august 2018 to August 2019.

All patients with gall stones undergoing laparoscopic cholecystectomy were analysed for any post-operative complications at the port site. This study was conducted after obtaining informed consent from all patients. Inclusion criteria were age 16-70 years, symptomatic cholelithiasis, chronic asymptomatic cholelithiasis, acute on chronic cholecystitis. Exclusion criteria age < 16 years > 70 years, acute cholecystitis, acute pancreatitis, pregnancy, bleeding disorders, patients with heart disorders and patients not giving consent for the study.

All patients received the same antibiotics pre and post operatively. ceftriaxone 1gm and metronidazole 100cc were the antibiotics used. The same operative technique was used in all cases. A drain was placed during surgery and removed on POD-2.

The first dressing was done with 48 hours of surgery.

The port sites were examined thoroughly at the time of dressing for any complications. Early complications such as discharge, bleeding, infection if present were treated.

After drain removal in the absence of any complications, patient was discharged.

After discharge from hospital came for follow up and suture removal on post-operative day 10. If any complications were present they were admitted and treated.

In the absence of any complications, the patients were followed up at one monthly intervals. During these visits, port sites were examined for Delayed complications such as wound dehiscence and port site hernias.

RESULTS

70 patients were enrolled in this study. In this study only 2 out of 70 patients developed complications. The patients age was between 20 to 60 years. 58 patients were females and 12 patients were males. The only complication which occurred was surgical site infection at the port site. All complications were in female patients. There was no case report of port site hernia in this study. There was no case report of wound dehiscence in this study. Hospital stay was significantly increased in patients who developed complications, from 2 days in uncomplicated cases to 14 days in complicated cases.

Table 1: Age Distribution Ratio.

AGE GROUP	MALE	FEMALE	TOTAL	PORT SITE COMPLICATIONS.
16-20	1	4	5	0
20-60	11	51	62	2
60-70	0	3	3	0

Table 2: Type Of Infection

PORT SITE COMPLICATIONS	NO. OF CASES
Bleeding	0
Infection	2
Discharge	0
hernia	0

Wound dehiscence	0

Figure 1: Epigastric Port Infection.

DISCUSSION

In this study the same operative technique was used in all patients. A total of four ports was used. Two 10mm ports were made (epigastrium and infra-umbilical port). Two 5mm working ports were made (right hypochondrium and the other below the costal margin). Calot's triangle were identified. Dissection was started posteriorly at the Hartmann's pouch. liga clips were used to ligate and the cystic duct and cystic artery. The gallbladder was extracted from the epigastric port. A drain was placed in the gall bladder fossa using the lowermost 5mm incision. the port sites were sutured using ethion 2-0.

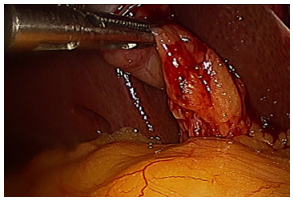

Figure 2- dissection at gall bladder started from posterior aspect

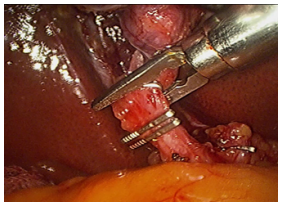

Figure 3- ligation of cystic ducts using liga clips

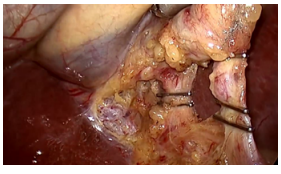

Figure 4 – Dissection of Calot's triangle showing artery and duct.

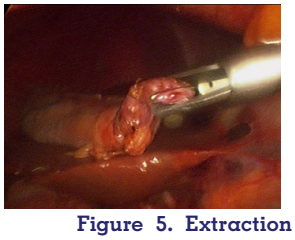

Figure 5. Extraction without bag

Port-site infection (PSI) is a prevailing, chronic, treatment refractory complication of laparoscopic surgery (LS). It neutralizes the advantages of minimally invasive surgery and increases morbidity; it increases treatment cost of patient. [2] PSIs are preventable with appropriate preoperative, intraoperative, and postoperative measures. With the advent of single use plastic trocars, the incidence of port infections has been reduced significantly with a trade off in increasing costs. Various authors have reported incidence from 1.8% to 5.3%.[1] PSI is a type of SSI but limited to Laparoscopic Surgery. The active surveillance for PSIs in Laparoscopic Surgery remains a challenge, due to the early discharge. In the absence of post-discharge surveillance, it is estimated that a third of all SSIs will be missed.

A number of contributing factors are responsible for the emergence of postoperative PSIs. Antibiotics always may not be the answer to this problem. Thus, using them irrationally, as is often done will only result in the emergence of multidrug resistant microbes. Obesity, prophylactic antibiotics, and drains have no effect on the rate of PSIs following laparoscopic cholecystectomy. [4] PSIs are more common in the port through which the specimen is extracted. The infected specimen should be removed in an endobag in order to prevent wound infection. PSIs occur due to exposure of surgical wound to microbes which may be from an endogenous or exogenous source. Careful sterile technique can reduce the exogenous source. The early infections are usually non-mycobacterial isolates and typically occur in a week. Staphylococcus is the most common followed by Pseudomonas and other gran negative bacteria. The late infections are mycobacterial occurring in the 3rd or 4th week of surgery. This is more prevalent in the developing countries. Treatment is firstly by prevention using standard sterile techniques- Use of disposable trocars and instruments, Use of autoclavable laparoscopic hand instruments, Avoiding spillage of bile or gut content in the operative area or the port site, Use of specimen retrieval bags, Thorough irrigation and cleaning of the port site before wound closure, Antibiotics as per the antibiogram.

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