

## **A Study of Port Site Complications after Laparoscopic Cholecystectomies at Tertiary Care Hospital Jaipur**

Dr. Pradeep Kumar Verma<sup>1</sup>, Dr. Sanvar Mal Kantva<sup>2</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Senior Resident

<sup>1</sup>Department of General Surgery, S M S Medical College Jaipur

<sup>2</sup>Department of General Surgery, S M S Medical College & Attached Group of Hospital, Jaipur

**Corresponding Author:** Dr. Sanvar Mal Kantva, Senior Resident, Department of General Surgery, S M S Medical College & Attached Group of Hospital, Jaipur

**Type of Publication:** Original Research Article

**Conflicts of Interest:** Nil

### **Abstract**

**Background:** Port site complications though rare, shall be evaluated and studied so as to improve the quality of healthcare.

**Methods:** This prospective study was conducted in the Department of General Surgery, S M S Medical College & Hospital, Jaipur, Rajasthan. 200 patients of all age group and both sexes with symptomatic cholelithiasis undergoing laparoscopic cholecystectomy.

**Result:** Out of 200 patients studied only 1 patient presented with port site hernia in the follow up and 11 patients presented with port site infection. No other complication were detected after laparoscopic cholecystectomies.

**Conclusion:** It is concluded that port site complications are rare in elective laparoscopic cholecystectomy and can be further reduced by proper selection of patients, and strictly following basic principles of laparoscopic cholecystectomy.

**Keywords:** Laparoscopic surgeries, Port site infections, Complications

### **Introduction**

Laparoscopic techniques have revolutionized the field of surgery. Benefits include decreased postoperative pain, quicker return to normal activity, and less postoperative complications. However, unique complications are associated with gaining access to the abdomen for laparoscopic surgery. Inadvertent bowel injury or major vascular injury are uncommon but potentially life-threatening complications, usually occurring during initial access.<sup>1,2</sup> The overall rate of major complications following a laparoscopic procedure is approximately 1.4 per 1,000 procedures.<sup>3</sup> However the incidence of port site complications following laparoscopic surgery is considered to be around 21 per 100,000 cases<sup>4</sup> and it has shown a proportional rise with the increase in size of the port site incision and trocar<sup>5,6</sup>

Aim of our study is to assess the port site infections in laparoscopic surgeries and its management. To prevent the infection, proper sterilisation and storage of instruments is recommended. The centers for Disease control & prevention classification (CDC) categorised Surgical Site Infection (SSI) in to incision site infection and organ space infection. The incision site infection is divided in to

superficial and deep infection. Superficial means only skin and subcutaneous tissue infection whereas deep means fascia and muscle involvement.<sup>7</sup>

**Materials & Methods**

**Study design:** prospective hospital based study.

**Study population:** Patients of all age group and both sex who underwent laparoscopic surgeries during the above period was include in the the study .

**Sample size:** All patients reporting to the Surgery dept. within study duration and eligible as per inclusion criteria was included in the study.

**Sampling Method:** Purposive sampling

**Inclusion Criteria:** Patients of all age group and both sex who underwent laparoscopic surgeries during the above period was included in the study.

**Exclusion Criteria:** Those patients who were converted to open procedures were excluded from the study.

**Data Analysis:** To collect required information from eligible patients a pre-structured pre-tested Proforma was used. For data analysis Microsoft excel and statistical software SPSS was used and data was analysed with the help of frequencies, figures, proportions, measures of central tendency and appropriate statistical test wherever required *p*-value <0.05 was considered as significant.

**Results**

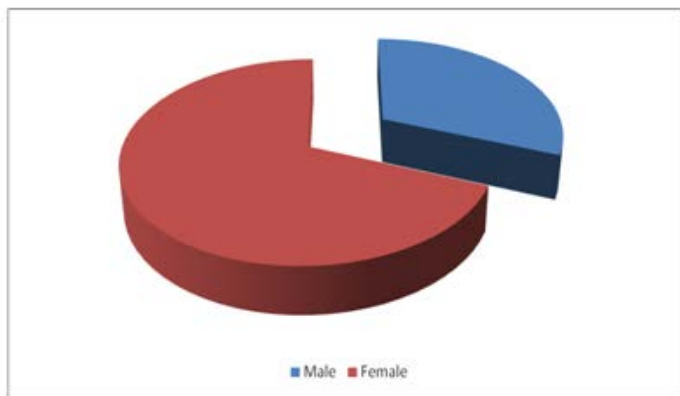


Fig.1 Sex distribution of caeserian sections

Among the 200 patients, 140 (70.00%) were females and 60 (30.00%) were males.

Table no. 1. Sex wise distribution of port site infection

Port site infection	Male	Female	Total
Present	3	8	11
Absent	57	132	189
Total	60	140	200

11(5.50%) patients had port site infections among the patients. Of which 8 were females and 3 were males. Out of 200 patients studied only 1 patient presented with port site hernia in the follow up

**Discussion**

There is no debate that laparoscopic surgery has had tremendous positive impact on patients and the healthcare system. Patients tend to have less pain, less morbidity and return to their daily activities more quickly. Thus, the number of laparoscopic procedures done each year continues to rise substantially.

For many surgical diseases, laparoscopic surgery is the gold standard. Nevertheless, this procedure needs to be performed by experienced surgeons to avoid major complications. Just like the open surgeries, laparoscopic surgeries are also not without complications.

Port site complications can be grouped into postoperative complications and access-related complications, and these have been reported in all age groups and in both genders. It has been reported that obesity is one of the risk factors for increased morbidity related to port site due to various factors such as the need for longer trocars, thick abdominal wall, need for larger skin incision to expose fascia adequately, and limitation in mobility of the instrument due to increased subcutaneous tissue. Hence, care must be taken during placement of trocars to align their axes as needed for the procedure.<sup>8</sup>

In the present study, 5.50% of the patients had port site infections. This was in accordance to a study by Mir et al who observed a PSI of 6.7% in patients after elective cholecystectomy by laparoscopy. The cause of the incidence was accredited to the reusable trocars.<sup>9</sup> PSI was 5.7% in a study by Sujith Kumar et al 6.3% by Shindholimath et al, 5.3% by Den Hoed et al and 5.5% by Atul K et al in their studies.<sup>10-13</sup> Atul K et al pointed out that proper sterilization of instruments is the most crucial step in prevention of PSI.

### Conclusion

It is concluded that port site complications are rare in elective laparoscopic cholecystectomy and can be further reduced by proper selection of patients, and strictly following basic principles of laparoscopic cholecystectomy

### References

1. Ahmad G, Duffy JM, Phillips K, Watson A. Laparoscopic entry techniques. *Cochrane Database Syst Rev*. 2008;2:CD006583.
2. Jansen FW, Kolkman W, Bakkum EA, de Kroon CD, Trimbos-Kemper TC, Trimbos JB. Complications of laparoscopy: An inquiry about closed- versus open-entry technique. *Am J Obstet Gynecol*. 2004;190:634–8
3. Jansen FW, Kapiteyn K, Trimbos-Kemper T, Hermans J, Trimbos JB. Complications of laparoscopy a prospective multicentre observational study. *Br J Obstet Gynaecol*. 1997;104:595–600.
4. Aziz R. *Practical Manual of operative Laparoscopy*. New York: Springer-Verlag; 1992. pp. 1–8.
5. Kadar N, Reich H, Liu CY, Manko GF, Gimpelson R. Incisional hernias after major laparoscopic gynecologic procedures. *Am J Obstet Gynecol*. 1993;168:1493–5.
6. Chiu CC, Lee WJ, Wang W, Wei PL, Huang MT. Prevention of trocar-wound hernia in laparoscopic bariatric operations. *Obes Surg*. 2006;16:913–8.
7. Hackan DJ, Rotstein OD. Host response to laparoscopic surgery: mechanisms and clinical correlates. *Can J Surg* 1998;41:103–11.
8. Karthik S, Augustine AJ, Shibumon MM, Pai MV. Analysis of laparoscopic port site complications:a descriptive study. *J Min Access Surg*. 2013;9:59-64.
9. Mir M, Khursheed U, Bali B. Frequency and risk factor assessment of port site infection after elective laparoscopic cholecystectomy in low risk patients at tertiary care hospital of Kashmir. *Internet J Surg*. 2012;28(2):1-5.
10. Kumar SS, Babu DK, Grace DR, Anpian JC, Bhaskar M. A study of port site infections in laparoscopic surgeries. *Journal Dent Med Sci*. 2015;14(4):20-2.
11. Shindholimeth VV, Seenu N, Parshed R, Chaudhry R, Kumar A. Factors influencing wound infection following laparoscopic cholecystectomy. *Trop Gastroentero*. 2003;24:90-2.
12. Den HPT, Boelhouwer RU, Veen HF, Hop WC, Brikinig HA. Infections and bacteriological data after laparoscopic and open gall bladder surgery. *J Hosp Infect*. 1998;39:27-37.
13. Sharma AK, Sharma R, Sharma S. Post site infection in laparoscopic surgeries-clinical study. *Indian Med Gazette*. 2013:224-9.