



RESEARCH ARTICLE

A RETROSPECTIVE STUDY OF OUTCOME OF INTRAOPERATIVE GALL BLADDER PERFORATION DURING LAPROSCOPIC CHOLECYSTECTOMY

*Kundan, Aman Kumar and Ajit Bahadur Singh

Department of Surgery, Patna Medical College & Hospital, Patna, India

ARTICLE INFO

Article History:

Received 22nd April, 2016
Received in revised form
15th May, 2016
Accepted 26th June, 2016
Published online 31st July, 2016

Key words:

Laparoscopic Cholecystectomy,
Intraoperative Perforation,
Bile spillage, Gallbladder.

ABSTRACT

Background: During laparoscopic cholecystectomy, gallbladder perforation with leakage of bile and/or gallstones into the abdominal cavity occurs frequently while gallbladder is being dissected from liver bed or while extracting it through the port site. In this retrospective study we have studied the case files of the patients who underwent laparoscopic cholecystectomy and had intraoperative gallbladder perforation and had studied its effect on outcome of the surgery.

Material & method: This is a retrospective done at patna medical college and hospital in January 2016 in which the patients records of 310 patients of laparoscopic cholecystectomy from January 2015 to December 2015 were studied. The incidence of perforation, duration of operation and the post-operative complications were noted and the data obtained was analysed

Result: In 310 patient, only 16 (5.17%) patients had gallbladder perforation. The perforation was more common during dissection from liver bed. The mean duration of surgery in perforated cases were 65 min compared to 50 mins in patients without perforation.

Mean duration of stay in hospital was 56 hrs in patients with perforation while it was 22 hrs in patients without perforation.

Conclusion: Intraoperative Gallbladder perforation does not lead to any other adverse complications.

Copyright©2016, Kundan et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Kundan, Aman Kumar and Ajit Bahadur Singh, 2016. "A retrospective study of outcome of Intraoperative gall bladder perforation during laparoscopic cholecystectomy", *International Journal of Current Research*, 8, (07), 35252-35254.

INTRODUCTION

Laparoscopic cholecystectomy is the gold standard for the treatment of cholelithiasis. Although the overall complication rate is less than the traditional open approach, there appear to be at least two operative complications that occur with greater frequency during laparoscopic cholecystectomy (Horton *et al.*, 1988). One is the bile duct injury and other is the gallbladder perforation. Gallbladder gets perforated while it is being dissected from liver bed or while being extracted through the port (Horton *et al.*, 1988) During laparoscopic cholecystectomy, because of perforation of the gallbladder, the rate of bile spillage and loss of gallstones into the peritoneum has been reported to be between 3% to 33% (Fitzgibbons *et al.*, 1993; Siewert *et al.*, 1993). The gallstone left in the peritoneal cavity acts as the source of infection, while the bile spillage may lead to chemical peritonitis and may cause localized or systemic infection, inflammation, fibrosis, adhesion, small bowel obstruction, septicemia, and intra-abdominal abscess (Zorluog *et al.*, 1997 and Memon *et al.*, 1999). After the perforation some surgeon consider to convert it to open in search of stone and for adequate lavage of the peritoneal

cavity, while some surgeons feels that adequate lavage can be done through the laparoscopy and there is no need of extensive stone search and conversion to the open procedure (Bennett *et al.*, 2000) Gallstone spillage can manifest years after the surgery as fibrosis, adhesion, and small bowel obstruction. In this retrospective study we have studied the case files of the patients who underwent laparoscopic cholecystectomy and had intraoperative gallbladder perforation and studied its effect on the outcome of the surgery.

MATERIAL AND METHODS

This is a retrospective done at patna medical college and hospital in January 2016 in which the patients records of 310 patients of laparoscopic cholecystectomy from January 2015 to December 2015 was studied. All the patients had received prophylactic preoperative antibiotics. The Incidence of intraoperative gallbladder perforation, duration of surgery, postoperative complications were noted down and the outcome and impact of intraoperative gallbladder perforation was studied in comparison to the patients who did not have intraoperative gallbladder perforation. The data obtained from this study was analysed and compared in terms of postoperative complication, stay in the hospital.

*Corresponding author: Kundan,

Department of surgery, Patna Medical College & Hospital, Patna, India.

RESULTS

There were total 310 patients in this study, out of which 29 were males and 281 were females with male and female ratio being 1:9. Out 310 patients operated 16 patients (5%) had intra-operative gallbladder perforation. In 16 patients of intra-operative gallbladder perforation, 9 patients had perforation during dissection of gallbladder from liver bed and 7 patients had perforation at the time of its extraction from the port site. 12 patients had only bile spillage while 4 patients had both bile and stone spillage together

Table 1. Results

Total no. patients	310
Incidence of GB perforations	16 (5.17%)
Perforation at liver bed	9
Perforation at port site	7
Bile spillage only	12
Bile and stone spillage	4
Converted to open	0
Drained	12
Not drained	4

It is the protocol at our hospital, that if such thing happens, the peritoneal cavity is thoroughly irrigated with normal saline and then aspirated and stone were searched and taken out laproscopically. It is on the discretion of surgeon to put a drain or not. In this study out 16 patients, drain was put in 12 patients. None of the patients were converted to open. The drain was taken out after 24 hrs and then patients were discharged. The mean duration of operation of laproscopic cholecystectomy was 50 minutes while in patients who had gallbladder perforation, the mean duration was 65 minutes. The postoperative period was uneventful. None of the patients had surgical site infections. Only three patients (18.75%) had post operative fever for which ultrasound was done which did not showed any collections in subhepatic or subphrenic space. The fever subsided with the use of 3rd generation cephalosporin with metronidazole. The mean duration of stay in the hospital for the patients of gallbladder perforation was 55 hrs, compared to 22 hrs for the patients without perforation.

Table 2. Comparison of gb perforation case with the patients without gb perforation

	GB perforation cases	Without GB perforation
Mean duration of surgery	65 mins	50 mins
Postoperative fever	3 (18.75%)	16 (5.4%)
Duration of stay in the hospital	56 hrs	22 hrs

DISCUSSION

Most common complication reported with Laproscopic cholecystectomy is the wound infection, the most common worrisome complication is bile duct injury or bile leakage. Other commonly described complications include retained common duct stones, haemorrhage or vascular structure injury, bowel or other viscera injury, and intraoperative gallbladder perforation and stone spillage (Bennett et al., 2006). The most common site of gallbladder perforation as has been previously described in literature is at the time of dissection of gallbladder

from liver bed and secondly at the time of its extraction from the port site. Main cause being cited for it is lack of preprocedural aspiration of bile as it used to be during open cholecystectomy and dissection being done with distended gallbladder (Welch et al., 1991). The incidence of gallbladder perforation has been reported to be around 30%, and incidence of stones spillage in the peritoneal cavity is around 20% (Soper et al., 1991). In our study the incidence of gallbladder perforation is 5.17% and the incidence of stone spillage being 1.2%. (Welch et al., 1991 and Cohen et al., 1994). The gallstone left in the peritoneal cavity acts as a site of infection, while bile spillage may lead to biliary peritonitis these might be the cause of wound infections, intraperitoneal abscesses, adhesions with consequent intestinal obstruction. In our study only 3 patients (18.75%) of gallbladder perforation had postoperative fever for which USG was done to look for any collection. USG was negative for collections. The fever subsided with antibiotics. If gallstones are knowingly spilled within the abdominal cavity, every attempt should be made to remove all gallstones. Because infective complications are rare following gallbladder perforation, conversion to laparotomy is not routinely indicated (Sarli et al., 1999) T. T. HUI *et al.* reported gallbladder perforation rate as 36% cases without any late postoperative complication. For this reason, conversion to an open procedure for removal of dropped stones is not advocated (HUI, 1999).

Conclusion

Intraoperative gallbladder perforation doesn't cause any serious complication. The only effect is increase in the duration of surgery and the Hospital stay which can be attributed to postoperative fever and drain placements. There is no need of conversion to open in cases of intra-operative gallbladder perforation.

REFERENCES

- Bennett, A.A., Gilkeson, R.C., Haaga, J.R. *et al.* 2000. Complication of "dropped" gallstones after laparoscopic cholecystectomy: technical consideration and imaging findings. *Abdominal Imaging*, 25:190-193
- Cohen, R.V., Pereira, P.R., Barros, M.V., *et al.* 1994. Is the retrieval of lost Peritoneal gallstones worthwhile? *Surg. Endosc.* 8:1360
- Fitzgibbons, R.J., Annibali, R., Litke, B.S. 1993. Gallbladder and gallstone removal, open versus closed laparoscopy, and pneumoperitoneum. *Am. J. Surg.*, 165:497-504
- Horton, M., Florence, M.G. 1998. Unusual abscess patterns following dropped gallstones during laparoscopic cholecystectomy. *Am. J. Surg.*, 175:375-378
- Hui T. T., Giurgiu D. I., Margulies D. R., Takagi S., Iida A., Phillips E. H. 1999. Iatrogenic gallbladder perforation during laparoscopic cholecystectomy: etiology and sequelae. *Am Surg*, 65 : 944-8.
- Johnston, S., O _ Malley, K., McEntee, G., *et al.* 1994. The need to retrieve the dropped stone during laparoscopic cholecystectomy. *Am. J. Surg.*, 167:608-610
- Laufer, J.M., Krahenbu, hl L, Baer, H.U., *et al.* 1997. Clinical manifestations off lost gallstones after laparoscopic

- cholecystectomy: a case report with review of the literature. *Surg. Laparosc.*, 7:103-112
- Leland, D.G., Dawson, D.L. 1993. Adhesion and experimental intraperitoneal gallstones. *Contemp. Surg.*, 42:273-276
- Memon, M.A., Deeik, R.K., Mafii, T.R., *et al.* 1999. The outcome of unretrieved gallstones in the peritoneal cavity during laparoscopic cholecystectomy. *Surg. Endosc.*, 13:848-857
- Sarli, L., Pietra, N., Costi, R., Grattarola, M. 1999. Gallbladder perforation during laparoscopic cholecystectomy; *World J Surg.* Nov; 23(11):1186-90.
- Siewert, J.R., Feussner, H., Scherer, M.A., *et al.* 1993. Fehler und Gefahren der Laparoscopic vs. open Cholecystectomy *Chirurg* 1993; 64:221-229
- Soper, N.J., Dunnegan, D.L. 1991. Does intraoperative gallbladder perforation influence the early outcome of laparoscopic cholecystectomy? *Surg. Laparosc. Endosc.*, 156-161
- Welch, N., Hinder, R.A., Fitzgibbons, R.J., *et al.* 1991. Gallstones in the peritoneal cavity: a clinical and experimental study. *Surg. Laparosc. Endosc.*, 1:246-247
- Zorluog? Lu A, O' zgu' c, H, Yilmazlar T, *et al.* Is it necessary to retrieve dropped gallstones during laparoscopic cholecystectomy? *Surg. Endosc.* 1997;11:64-66
