

Penrose Drain Migration after Laparoscopic Surgery

Abdol Reza Pazouki, Karamollah Toolabi, Leila Zahedi Shoolami, Seyed Ahmad Fanaii, and Mohammad Vaziri*

Department of Surgery, Hazrat Rasool Hospital, School of Medicine, Iran University of Medical Sciences, Tehran, Iran

Received: 4 Mar. 2007; Received in revised form: 5 Apr. 2007; Accepted: 26 Sep. 2007

Abstract- Laparoscopy has made a revolution in surgical procedures and treatment of various diseases but its complications are still under investigation. Intra-abdominal visceral and vessel injuries, trocar site hernia, and leaving foreign bodies into the peritoneal cavity are among some laparoscopic surgery complications. This is a rare report of Penrose drain migration following incomplete laparoscopic Fundoplication surgery. The patient was a 47-year-old woman, who was a candidate for Toupet Fundoplication via laparoscopic approach due to refractory gastro-esophageal reflux disease (GERD). While wrapping a Penrose drain around the esophagus, the patient had a cardiorespiratory arrest. Attempts to remove the Penrose drain were unsuccessful and the surgical procedure was terminated due to patient's condition. Four months later, after a long period of dysphagia and abdominal pain, the Penrose drain was defecated via rectum.

© 2009 Tehran University of Medical Sciences. All rights reserved.

Acta Medica Iranica 2009; 47(2): 159-160.

Key words: Laparoscopy, Intraoperative complications, foreign-body migration

Introduction

Laparoscopy is evolving for a wide range of surgical procedures although it was initially confined to cholecystectomy and exploratory laparoscopy. Considering the increasing rate of using this technique, its complications are not well known. Incidence of Laparoscopy complications which can present as early or late events is about 1.1%-5.2% for minor surgeries and 2.5% – 6% for major surgeries (1). Intra operative and post operative complications may be attributable to the conduct of anesthesia, specific position of the patient during the surgery, pneumoperitoneum induction, trocar insertion and using mechanical or electrosurgical instruments during the operation. Internal organ perforation, hernia, and leaving foreign bodies in the peritoneal cavity are among other laparoscopic surgery complications (2-5). Previous studies have indicated that most reported foreign bodies which have been left out in the peritoneal cavity were related to surgical clips and their migration to hollow viscus or adjacent lumens (6). This is a rare report of Penrose drain migration following incomplete laparoscopic Fundoplication surgery.

Case Report

The patient was a 47-year-old woman with a prolonged history of retrosternal pain and previous coronary bal-

loon angioplasty and continuing Aspirin treatment since 3 years ago. An esophageal manometry was indicative of gastro-esophageal reflux and ineffective esophageal body peristaltic contractions. Hypotensive low esophageal sphincter (9.6 mmHg), normal peristaltic waves (43%), no hypotensive waves and 14% hypertensive waves was reported. Due to ineffective Omeprazole therapy, 20 mg twice daily, and following proper cardiac consultation and preparation of the patient, Toupet Fundoplication via laparoscopic approach and in deep reverse Trendelenburg position was performed on Sep 25th 2005. Following clear exposure of diaphragmatic crura, a Penrose drain was wrapped around the abdominal esophagus. The patient underwent cardio respiratory arrest during dissection of the cardia and putting the drain on tension. She was immediately turned to supine position and cardiopulmonary resuscitation was performed while emptying the intra-peritoneal gas. Considering the probable diagnosis of tension pneumothorax, bilateral chest tubes were inserted for the patient.

During a 40-minute period, the patient suffered three episodes of cardiac arrest but finally the CPR process was successful and the patient's heart rhythm returned to normal sinus rhythm. The continuation of the laparoscopic procedure was impossible and despite extending the umbilical incision, attempts to remove the Penrose drain were failed.

*Corresponding Author: Mohammad Vaziri

Department of Surgery, Hazrat Rasool Hospital, School of Medicine, Iran University of Medical Sciences, Tehran, Iran
Tel: +98 912 1711348, Fax: +98 21 66509056, E-mail: dr_m_vaziri@yahoo.com



Figure 1. The Penrose drain defecated 4 months post operation

Following 36 hours of intubation in the ICU ward and 7 days of hospital stay, the patient eventually discharged from the hospital in a good condition.

Follow-up of the patient revealed recurrence of reflux symptoms, dysphagia to solid foods and occasional abdominal pains. Re operation of the patient was scheduled but at least a 3-month-delay was recommended by the cardiologist who considered mitral valve prolapse as the probable cause of the patient's arrest during the operation

Four months after the operation and following defecation of the Penrose drain, all symptoms of the patient including abdominal pain and dysphagia was relieved. (Figure 1).

Discussion

Although leaving foreign bodies in the peritoneal cavity and its migration to gastro-intestinal tract is a relatively common complication following open surgical procedures but in laparoscopic surgery, it is a rare event and the reports are mostly related to surgical clips used in laparoscopic cholecystectomy and gastric band used in surgeries for morbid obesity (3,7,8). Ileocecal valve obstruction and diaphragmatic penetration due to sponge gauze migration has also been reported in literature (9).

Penrose drain migration in the gastro-intestinal tract following laparoscopic or open surgery has not been reported so far.

In this case it seems that the patient's abdominal pain prior to defecation was related to the drain migration and the probable local peritonitis.

References

1. Kane MG, Krejs GJ. Complications of diagnostic laparoscopy in Dallas: a 7-year prospective study. *Gastrointest Endosc* 1984; 30(4): 237-40.
2. Ahn SI, Lee KY, Kim SJ, Cho EH, Choi SK, Hur YS, et al. Surgical clips found at the hepatic duct after laparoscopic cholecystectomy: a possible case of clip migration. *Surg Laparosc Endosc Percutan Tech* 2005; 15(5): 279-82.
3. Yoshizumi T, Ikeda T, Shimizu T, Ohta S, Nagata S, Sonoda T, et al. Clip migration causes choledocholithiasis after laparoscopic cholecystectomy. *Surg Endosc* 2000; 14(12): 1188.
4. Mouzas IA, Petrakis I, Vardas E, Kogerakis N, Skordilis P, Prassopoulos P. Bile leakage presenting as acute abdomen due to a stone created around a migrated surgical clip. *Med Sci Monit* 2005; 11(3): CS16-8.
5. Yao CC, Wong HH, Chen CC, Wang CC, Yang CC, Lin CS. Migration of endoclip into duodenum. A rare complication after laparoscopic cholecystectomy. *Surg Endosc* 2001; 15(2): 217.
6. Alberts MS, Fenoglio M, Ratzler E. Recurrent common bile duct stones containing metallic clips following laparoscopic common bile duct exploration. *J Laparoendosc Adv Surg Tech A* 1999; 9(5): 441-4.
7. Anast JW, Stoller ML, Meng MV, Master VA, Mitchell JA, Bassett WW, et al. Differences in complications and outcomes for obese patients undergoing laparoscopic radical, partial or simple nephrectomy. *J Urol* 2004; 172(6 Pt 1): 2287-91.
8. Lone GN, Bhat AH, Tak MY, Garcoo SA. Transdiaphragmatic migration of forgotten gauze sponge: an unreported entity of lung abscess. *Eur J Cardiothorac Surg* 2005; 28(2): 355-7.
9. Stroh C, Hohmann U, Arnold F, Manger T. Band migration. A late complication of gastric banding. *Chirurg* 2005; 76(7): 689-95.