

Giant gallstone in abdominal wall: a rare complication of laparoscopic cholecystectomy

Batın ön duvarında dev safra taşı; nadir laparoskopik kolesistektomi komplikasyonu

Cengizhan Yiğitler¹, Kazım Duman², Ali Özcan³

¹GATA, Haydarpaşa Training Hospital, Department of General Surgery Istanbul

²Gumussuyu Military Hospital Department of General Surgery, Istanbul

³Balikesir Military Hospital, Department of Radiology, Balikesir

Abstract

We aim to report a case of abdominal wall mass formation secondary to gallbladder perforation and stone spillage occurring during laparoscopic cholecystectomy (LC). A 73-year-old woman presented with purulent discharge from one of her previous port sites one year after she underwent LC. The latter revealed a round opaque mass in an abscess like cavity, and subsequently an ultrasonography showed a round echogenicity with acoustic shadow posteriorly. Axial CT images verified the presence of a well-circumscribed hyperdensity which was really a gallstone in a cystic mass. To reduce this complication, excessive traction of the gallbladder should be avoided during dissection. Prior to extraction, gallbladder contents should be aspirated, and to extract larger stones. In the event of perforation occurring, the gallbladder should be placed in a plastic bag, spilled stones should be retrieved where possible and excessive irrigation used to remove the bile.

Keywords: Abdominal wall; gallstones; laparoscopic cholecystectomy.

Özet

Laparoskopik kolesistektomi postoperatif komplikasyonları oldukça çeşitlidir. Bu vakada amacımız, perfore safra kesesinin ekstrakte edilirken, dökülen safra taşının batın ön duvarında kalması ve burada kitle formasyonu göstermesinin sunulmasıdır. 73 yaşında bayan bir hastanın, Laparoskopik kolesistektomi ameliyatından yaklaşık 1 yıl sonra port yerinden pürülan akıntı, şişlik şikâyetleriyle müracaat etmesi sonucu hastaya yapılan Batın tomografisi ve ultrasonografisinde; cilt altında rektus kası önünde taş ekojenitesinin gözlenmiştir. Hasta operasyona alınmış ve taş ekstrakte edilmiştir. Sonuç olarak; Laparoskopik kolesistektomi olguları uzun dönem takip edilmeli, safra kesesi karaciğer yatağından son derece nazik diseksi edilmeli, batın dışına alınırken endoskopik torba kullanılmalıdır.

Anahtar kelimeler: Abdominal duvar; laparoskopik kolesistektomi; safra taşı.

Introduction

The most common complication of the laparoscopic cholecystectomy (LC) which has been the gold standard for the symptomatic gallbladder calculi is accidental opening of the gallbladder wall and the spillage of content into the abdominal cavity occurring in 9 to 20% of the procedures (1,2). Predisposing factors for stone spillage during LC are older age, male sex, presence of acute cholecystitis, surgeon's experience, number (>15) or size of the stone (>15 mm), and localization of lost stones (1,3). Its potential morbidity and late sequelae have not been documented well and there has been conflicting data related to stone spillage. While some authors stated that every effort should be attempted to remove all spilled stones completely either laparoscopically or by laparotomy, it is not recommended by others reporting that abscess formation is fairly a minor problem (4,5,6). On the other hand, there are many reports on abdominal wall abscess and sinuses due to retained gallstones in small trocar incision used that makes the retrieval of an inflamed and/or perforated gallbladder difficult, especially if it contains multiple or huge stones (1,7). We present and discuss herein a case of abdominal wall sinus at the lateral subcostal port incision of the previous LC containing a spilled gallstone of as large as 3 cm-in diameter

discovered one year after the operation.

Case

A 73-year-old woman presented with purulent discharge from one of her previous port sites one year after her LC. Except the dense inflammatory adhesions, operation note was uneventful, mentioning that the gallbladder wall integrity was maintained, endobag was not used during the extraction of the gallbladder, and a drain was placed by lateral subcostal port preoperatively. One month later, purulent greenish material from the previous port site was misinterpreted to be a small biliary fistula and managed conservatively. Afterward consecutive abscess and purulent discharges have been repetitively drained with chronic wound care during one year.

At referral the patient had tenderness around a chronic draining orifice at lateral subcostal port. Local exploration of the wound revealed a firm mass within the sinus cavity, and subsequently an ultrasonography showing a round echogenicity with posterior acoustic shadow conducted us to a CT imaging verifying the presence of a well-circumscribed hyperdense lesion (Figure 1). There was no abnormality in her urine and blood examination. Therefore, the sinus orifice was excised under local anesthesia, and the cystic cavity was entered. A gallstone that measured 3 cm-in diameter into the cystic cavity located in the anterior abdominal wall

İletişim/Correspondence to: Kazım Duman, Gumussuyu Military Hospital, Department of General Surgery, Istanbul, TURKEY
Tel: +90 538 385 9511 drkduman@gmail.com

Received: 15.05.2012 **Accepted:** 13.06.2012
Geliş Tarihi: 15.05.2012 **Kabul Tarihi:** 13.06.2012

DOI: 10.5455/GMJ-30-2012-95
www.gantep.edu.tr/~tipdergi
ISSN 1300-0888

within the right rectus sheath was extracted (Figure 2). The sinus tract was curetted. The cyst wall was not communicated with the abdominal cavity. The wound was sutured primarily and the patient recovered imminently.



Figure 1. Mass located in the anterior abdominal wall within the right rectus sheath.



Figure 2. The extracted gallstone.

Discussion

Although laparoscopy has become a gold standard for the treatment of symptomatic gallstones, complications associated with biliary or vascular injury and damage to adjacent organs cause most significant morbidity. Spillage of gallbladder contents has been reported to occur in 9 to 20 % of operations during the dissection (75%), traction (15-51%) or extraction (25%) of the gallbladder (1,2). Inadvertent traction of gallbladder and monopolar electrocautery use when it has been dissected from the liver bed, forced delivery of the gallbladder through the umbilical port orifice that is too narrow, or inadvertent perforation of the gallbladder by the sharp piece of the grasper instrument are the main causes of bile and calculi spillage leading abscesses and sinus formation in the abdominal cavity or wall (7,8). This patient was thought to have a very friable edematous

gallbladder wall, accidental spillage of a greater stone occurred although the operation note denied the stone dropping. Possibly trying to retrieve through the subcostal ports, not all the stones could be removed and some were retained at abdominal wall-rectus sheath. In time, inflammation and foreign body reaction caused calcium deposits around the spilled gallstone which subsequently was enlarged. We agree that routine use of endobag, a detailed examination of the extracted gallbladder wall integrity would decrease these types of complications.

The lost gallstones were reported to cause a vast range of complications such as intestinal obstruction, abdominal wall sinuses and abscess, retroperitoneal masses, dyspareunia, empyema, uretral fistulas, even three years after the operation (1). However, their management is controversial. Considering these severe consequences, most surgeons prefer to find and remove all retained stones as well as surgical clips. Some studies have yet recommended a conversion to laparotomy in special cases with multiple pigment stones (9,10). On the other hand, several experimental studies supporting the idea that the dropped gallstones do not cause a great problem, believe to leave them after washing the abdomen with a saline solution and performing an antibiotic treatment (11,12).

However, a more common practice is to remove as many spilled stones as possible laparoscopically followed by irrigation of the abdominal cavity by normal saline. Clinical and experimental studies have shown that intraperitoneal gallstones could form a nidus of late infection (12). To reduce this complication, excessive traction of the gallbladder should be avoided during dissection, and gallbladder should be grasped with non-toothed, delicate forceps. Prior to extraction, gallbladder contents should be aspirated, and the port site incision should readily be enlarged to accommodate the gallbladder and to extract larger stones. In the event of perforation, the gallbladder should be placed in a plastic bag, spilled stones should be retrieved where possible and excessive irrigation used to remove the bile.

As clearly seen in our case, abdominal wall sinus due to retained gallstone in trocar sites is a long-term complication that should be managed carefully during operation to avoid misinterpretations and overcome time-consuming inappropriate managements.

References

1. Castellón-Pavón CJ, Morales-Areno S, Marthez-Pozuelo A, Valderrábano-González S. Complications due to spilled gallstones and surgical clips during laparoscopic cholecystectomy. *Cir Esp* 2008;84(1):3-9.
2. Deziel DJ, Millikan KW, Economou SG, Doolas A, Ko ST, Airan MC. Complications of laparoscopic cholecystectomy: a national survey of 4,292 hospitals and an analysis of 77,604 cases. *Am J Surg* 1993;165(1):9-14.
3. Papisavas PK, Caushaj PF, Gagne DJ. Spilled gallstones after laparoscopic cholecystectomy. *J Laparoendosc Adv Surg Tech A* 2002;12(5):383-6.
4. Werber YB, Wright CD. Massive hemoptysis from a lung abscess due to retained gallstones. *Ann Thorac Surg* 2001;72(1):278-9.

5. Yerdel MA, Alacayir I, Malkoc U, Baba F, Erverdi N, Pak I, et al. The fate of intraperitoneally retained gallstones with different morphologic and microbiologic characteristics: an experimental study. *J Laparoendosc Adv Surg Tech Part A* 1997;7(2):87-94.
6. Schafer M, Suter C, Klaiber C, Wehrli H, Frei E, Krahenbühl L. Spilled gallstones after laparoscopic cholecystectomy. A relevant problem? A retrospective analysis of 10,174 laparoscopic cholecystectomies. *Surg Endosc* 1998;12(4):305-9.
7. Shocket E. Abdominal abscess from gallstones spilled at laparoscopic cholecystectomy. Case report and review of the literature. *Surg Endosc* 1995;9(3):344-7.
8. Crist DW, Gadacz TR. Complications of laparoscopic surgery. *Surg Clin North Am* 1993;73(2):265-89.
9. Brockmann JG, Kocher T, Senninger NJ, Schurmann GM. Complications due to gallstones lost during laparoscopic cholecystectomy. *Surg Endosc* 2002;16(8):1226-32.
10. Diez J, Arozamena C, Gutierrez L, Bracco J, Mon A, Sanchez Almeyra R, et al. Lost stones during laparoscopic cholecystectomy. *HPB Surg* 1998;11(2):105-8.
11. Welch N, Hinder RA, Fitzgibbons RJ Jr, Rouse JW. Gallstones in the peritoneal cavity. A clinical and experimental study. *Surg Laparosc Endosc* 1991;1(4):246-7.
12. Zisman A, Loshkov G, Negri M, Herbert M, Halpern Z, Lin G, et al. The fate of long-standing intraperitoneal gallstone in the rat. *Surg Endosc* 1995;9(5):509-11.