CASE REPORT PROF-1208

SPILLED GALL STONE DURING LAPCHOLE;

A NOVEL METHOD OF PERCUTANEOUS CALCULI REMOVAL FROM THE ABDOMINAL CAVITY

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ABSTRACT... aliassarian@yahoo.com Spillage of gallstones has been reported during 7% of laparoscopic cholecystectomies. When associated with infected bile, this can cause intra-abdominal abscess formation resistant to simple drainage. In these cases laparotomy is usually indicated. We found few previous reports of percutaneous gallstone removal from the abdominal cavity, one of which used lithotripsy for stone extraction. We describe another successful case of percutaneous intra-abdominal gallstone removal using lithotripsy.

Key words: Percutaneous, gallstone, stone, calculus, intra-abdominal, removal, extraction, laparoscopy, spillage

INTRODUCTION

Intra-operative spillage of bile and stones is not uncommon during laparoscopic cholecystectomy. We describe a successful approach of percutaneous calculi removal from the abdominal cavity.

CASE HISTORY

A 72-year-old man presented with abdominal pain 6 years after a laparoscopic cholecystectomy. The elective cholecystectomy was carried out 2 months after the initial presentation with acute cholecystitis. At operation, the gallbladder was thick walled containing a large volume of sludge and a large soft stone impacted in Hartman's pouch. It was not possible to develop a clear tissue plane between the gallbladder and liver and some residual gallbladder wall was left in situ. The stone was crushed and removed piecemeal, with a thorough washout prior to closure. The patient made an uneventful recovery.

At 6 years post initial surgery, he was presented with a

palpable mass in the right upper quadrant of his abdomen. A CT scan showed a 15 x 12 cm low density fluid mass in right hypochondrium, abutting the under surface of the liver, and extending into the right iliac fossa. There was a 1.2cm rounded calcified density within the fluid anterior to the right iliac crest, presumed to be a retained gallstone [Fig 1]. There was no lymphadenopathy or free fluid and all organs were normal.

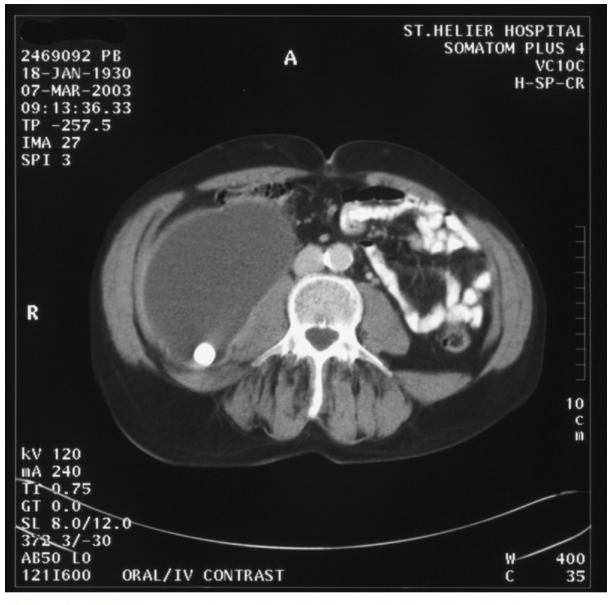

Fig-1. CT Scan showing intra-abdominal abscess containing a large gallstone

An initial ultrasound guided drainage using a 14F drainage catheter aspirated 1.7 litres of pus. Cultures grew Staphylococcus epidermidis and Enterococcus, which was treated by a 7 day course of Erythromycin. The catheter was left on free drainage with the output decreasing over a period of six weeks from 325mls/day to 10mls/day. Unfortunately the catheter was accidentally removed at six weeks and an ultrasound scan showed that the collection had re-accumulated to a size of 5x3cm with a 1.7cm highly echogenic structure sitting inferiorly.

The patient was admitted for percutaneous gallstone removal under general anaesthesia. An initial fine needle aspiration drained a large volume of pus, subsequently sent for culture. A 0.035" 'Stiff shaft Glidewire' Guidewire (Terumo medical corp.) was inserted down a TLA needle (Cook inc., Europe) into the abscess cavity [Fig 2].

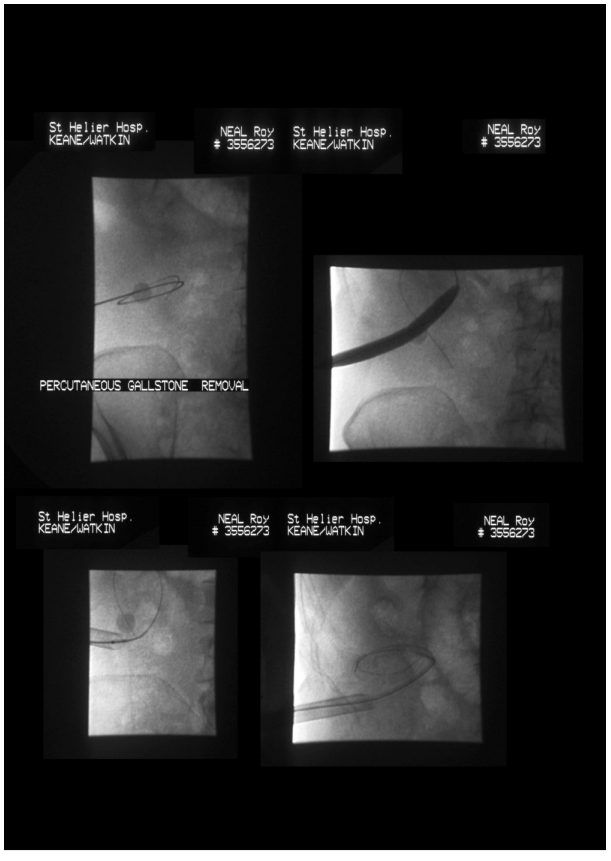

Fig-2. Percutaneous gallstone removal: Upper left, insertion of guidewire; Upper right,dilatation of the tract; Lower left, insertion of sheath; Lower right, X-ray after extraction

The tract was dilated with a 10mm x 12cm angioplasty balloon catheter (Cook inc., Europe). Further dilatation was undertaken using progressively larger sized Amplatz renal dilators (Cook inc., Europe). The abscess cavity was thick walled and prevented the 30F Amplatz TFE Sheath (Cook inc., Europe) from passing through it

completely. The Sheath was left abutting the outer wall of the cavity and a rigid nephroscope (Olympus Surgical inc., USA) was inserted. The stone was crushed using Ultrasonic Lithotripsy (LUS-2, Olympus surgical inc., USA) and removed in fragments. An 18F Wallace drain (Summit medical ltd., UK) was left in situ.

In the first 24 hours the drain collected 20mls of serous fluid and the patient was discharged with the drain in situ 2 days post procedure. At a 1 month follow up the drain had continued to collect small volumes of serous fluid and the drain was removed.

Follow up ultrasound over the past year has not revealed any recurrence of the collection and the patient remains asymptomatic.

DISCUSSION

Intra-operative gallbladder perforation and spillage of bile and stones is common during Laparoscopic cholecystectomy. In a review of 18,280 cases by Woodfield et al[1] a rate of 7.3% gallstone spillage was found. Furthermore the authors showed a 7% complication rate associated with these retained intra-peritoneal gallstones. The concurrent spillage of infected bile has been shown to lead to chronic infection, with the calculi becoming an infected foreign body, unresponsive to simple surgical drainage of the fluid[2].

Abscess formation is well documented after unretrieved intra-peritoneal gallstones. However, a systematic literature search has only revealed few previous reports of percutaneous calculi removal[2-5]. O'shea reports the use of mechanical devices whilst Trerotola reports the use of Ultrasonic lithotripsy for the removal of larger stones[2-3].

This report is a further successful example of percutaneous retrieval using ultrasonic lithotripsy on intra-peritoneal calculi measuring 17mm in diameter.

CONCLUSION

Percutaneous gallstone extraction from the abdominal cavity is technically feasible and spares the patient from unnecessary laparotomy. This report highlights the feasibility of such an approach which may become increasingly important as laparoscopic cholecystectomy becomes more widely practiced in future.

REFERENCES

1. Woodfield JC, Rodgers M, Winsor JA. **Peritoneal gallstones following laparoscopic cholecystectomy.** Surg Endosc. 2004;18: 1200-1207.
2. Trerotola S O, Lillemore K D, Malloy P C, Osterman F A. **Percutaneous removal of dropped gallstones after laproscopic cholecystectomy.** Radiology.1993;188:419-421.
3. O'shea S J, Martin D F. **Percutaneous removal of retained calculi from the abdomen.** Cardiovasc Intervent Radio. 2003;26:81-84.
4. Ibrecht RM, Eghtestad B, Gibel L, Locken J, Champlin A. **Percutaneous removal of spilled gallstones in a subhepatic abscess.** Am Surg. 2002; 68(2):193-5.
5. Kelkar AP, Kocher HM, Makar AA, Patel AG. **Extraction of retained gallstones from an abscess cavity: a percutaneous endoscopic technique.** Surg Laparosc Endosc Percutan Tech. 2001;11(2):129-30.