CASE REPORT

Spontaneous discharge of 'spilled gallstone' with complete resolution of retroperitoneal abscess in a patient treated for putative tuberculosis

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SUMMARY

A 76-year-old man presented 5 months following an open cholecystectomy with a complicated retroperitoneal abscess secondary to a retained gallstone, which was misdiagnosed as a tuberculous abscess. Subsequently, the stone was eventually spontaneously discharged with complete resolution of the associated collection.

analysis of the gallbladder specimen had revealed chronic cholecystitis.

INVESTIGATIONS

The CT scan showed a multilobulated collection in the right upper quadrant approximately 12 cm in diameter. Basal atelectasis was seen in the lungs along with right-sided pleural thickening.

DIFFERENTIAL DIAGNOSIS

The collection was thought to be a tuberculous abscess, and therefore it was initially managed as such pending the result of fluid aspiration and sputum analyses. The cough was attributed to the basal atelectasis seen on CT.

TREATMENT

Despite radiological drainage of the collection, the collection failed to improve completely and the patient suffered chronic sepsis. Empirical antituberculosis (antiTB) treatment was started, but was halted after 8 months prior to completion of the full course, when repeated cultures failed to demonstrate acid-fast bacilli, and a negative QuantiFERON-TB Gold test was obtained.

OUTCOME AND FOLLOW-UP

Twelve months later, the patient was eventually referred back to the operating surgeon. A repeat CT scan was ordered as an adjunct to a planned open washout. However, at repeat CT, the collection was noted to have completely resolved and a radio-opaque lesion was noted just below the skin surface. On a re-review in the clinic, this was noted to be the gallstone (which had given rise to the collection) which had spontaneously passed through the puncture site of one of the previous percutaneous drainage sites. The remaining sinus healed without requiring any further intervention, and an 8 week follow-up was scheduled.

DISCUSSION

Complications arising from gallstone spillage are well documented in the literature. However, owing to the low incidence of these cases, and the often significantly delayed presentation, accurate diagnosis can pose a considerable challenge. The complications described include both local and distant abscess formation, cutaneous sinus and fistula formation, intestinal obstruction, development of an empyema, cholelithoptysis, haematuria and septicæmia.² The likelihood of a complication occurring following gallstone spillage has been

BACKGROUND

Intraoperative gallstone spillage is a relatively common phenomenon, particularly with laparoscopic surgery, occurring in an estimated 3–33% of patients.¹ Although subsequent complications arising from intraperitoneal stones are a rarity, there are a number of isolated cases documented in the literature describing various modes of clinical presentation. In this unusual case, the retained gallstone was discharged spontaneously through a sinus, resulting in full resolution of the problem.

CASE PRESENTATION

A 76-year-old man presented with a 3-week-history of general malaise, weight loss, productive cough and right upper quadrant pain, 5 months following an open cholecystectomy (having been lost to hepatobiliary (HPB) follow-up).

Nine months previously, the patient had been referred to the HPB unit with a 2-month-history of epigastric pain, weight loss and jaundice. MRI confirmed a large 2.2 cm gallstone giving rise to a Mirizzi syndrome eroding through into the side wall of the common hepatic duct (along with multiple smaller calculi within the gallbladder). An endoscopic retrograde cholangiopancreatography and insertion of stent was undertaken as a temporising measure prior to definitive surgery.

Seven weeks later the patient was admitted with a 7-day-history of right upper quadrant abdominal pain, vomiting, rigours and fever, as well as a three-day history of loose stools. A CT scan demonstrated a gallbladder perforation and subsequent collection. A laparotomy and washout were undertaken. As the procedure was not performed at an HPB unit, definitive treatment of the bile duct was not undertaken at that time. The patient recovered and was discharged. Three months later, the patient underwent open cholecystectomy followed by a Roux-en-Y hepaticojejunostomy, the latter necessitated by significant damage to the common bile duct following erosion by a gallstone. Histological

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Figure 1 Black arrow A: Demonstrates the complex, multi-loculated retroperitoneal abscess (persisting even following attempts at percutaneous drainage). Black arrow B: Radio opaque retained stone visualised within abscess cavity.

quoted to be around 2.3%.³ Consideration of retained gallstones as a potential aetiology is warranted when assessing patients with unusual symptoms following a previous cholecystectomy.

The abscess was originally thought to have resulted from TB. Although the presence of TB was later refuted, similar complications arising from TB infection following cholecystectomy have been reported anecdotally in the literature. Three cases of port site infection, confirmed to be TB, and one of an abdominal tuberculous abscess were documented.^{4–7} However, this phenomenon appears to be extremely rare, and the reported cases had all occurred in the developing world. In this particular case, gallbladder TB was unlikely, owing to the absence of epithelioid granulomas on histology, and subsequent investigations had indicated that no TB infection was present in the abscess.

Several cases of cutaneous sinus formation have been previously described. Graham *et al*⁸ document the case of a patient presenting 5 months postoperatively with an intermittently discharging retroperitoneal sinus found to contain three gallstones within one of its branches. Treatment involved curetting and laying open the tract to heal by granulation. Previous cases have described sinus tracts requiring repeated surgical procedures before resolving.^{9,10} These examples illustrate the variation in time frame between cholecystectomy and clinical presentation and the range of severity of the problem, even when considering this specific complication. Owing to the delay in identifying this patient's root underlying cause for his retroperitoneal abscess, there was a delay in appropriately referring him.

Figure 2 Black arrow C: Demonstrates complete spontaneous resolution of the abscess with migration of the retained stone to the subcutaneous tissue just prior to its spontaneous discharge.

Zorluoglu *et al*¹¹ devised an investigation in which gallstones were implanted intra-abdominally into rats, along with sterile saline, sterile bile or infected bile. They demonstrated that infected bile, in combination with gallstones, created the greatest predisposition for adhesion and abscess formation. Using a similar model, Gurleyik *et al*¹² found that pigment stones appeared to predispose to more severe complications, indicating that the chemical composition of the stones may also be an influential factor. These factors may potentially increase the index of suspicion for retained gallstones when faced with a patient presenting with symptoms of complications following cholecystectomy.

Prevention of gallstones being retained is the most effective strategy for avoiding these complications from occurring in the first place. Therefore, care should be taken intraoperatively to avoid gallstone spillage, and failing this, an effort should be made to retrieve any stones which are spilled. Documentation of gallstone spillage would aid later diagnosis of any complications which may occur, and informing the patient of the possibility of such complications would be an important point to remember from a legal standpoint.

Learning points

- ▶ Despite complications arising from retained gallstones following cholecystectomy being well documented, the delay in diagnosis following surgery may obfuscate recognition of the problem.
- ▶ Recognition of the possibility of spilled stones being an underlying aetiology can potentially aid early diagnosis and definitive management.
- ▶ Every effort should be made intraoperatively to avoid gallstones remaining in the peritoneal cavity.

Competing interests None.

Patient consent Obtained.

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REFERENCES

- 1 Khan MI, Khan H, Ghani A. Frequency of spilled gallstones and bile leak in laparoscopic cholecystectomy. *Pak J Surg* 2011;27:95–9.
- 2 Sathesh-Kumar T, Saklani A, Vinayagam R, *et al*. Spilled gall stones during laparoscopic cholecystectomy: a review of the literature. *Postgrad Med J* 2004;80:77–9.
- 3 Woodfield J, Rodgers M, Windsor J. Peritoneal gallstones following laparoscopic cholecystectomy. *Surg Endosc* 2004;18:1200–7.
- 4 Jagdish N, Omprakash R, Sameer R. Port-site tuberculosis: a rare complication following laparoscopic cholecystectomy. *Scand J Infect Dis* 2002;34:928–9.
- 5 Kumar V, Singhal V. Port site tuberculosis following laparoscopic cholecystectomy. *Trop Doct* 2005;35:47–8.
- 6 Mansoor T, Rizvi SAA, Khan RA. Persistent port-site sinus in a patient after laparoscopic cholecystectomy: watch out for gallbladder tuberculosis. *Hepatobiliary Pancreat Dis Int* 2011;10:328–9.
- 7 Seith A, Srivastava D, Pande G. Tubercular abdominal abscesses following laparoscopic cholecystectomy: case report. *Trop Gastroenterol* 2001;22:216–18.
- 8 Graham MD, Anderson PG, Toouli J. Abdominal wall sinus: a late complication of gallstone spillage during laparoscopic cholecystectomy. *HPB Surg* 1997;10:163–4.
- 9 Brown D, Wagner A, Aronis M, *et al*. Recurring abdominal wall wounds and cutaneous sinus tract formations secondary to spilled gallstones. *Internet J Surg* 2009;21.
- 10 Williams N, Hill J, Shafiq M. Persistent discharging wound sinus from retained gallstone fragments following laparoscopic cholecystectomy. *Postgrad Med J* 1995;71:382–3.
- 11 Zorluoglu A, Özgüç H, Yilmazlar T, *et al*. Is it necessary to retrieve dropped gallstones during laparoscopic cholecystectomy? *Surg Endosc* 1997;11:64–6.
- 12 Gürleyik E, Gürleyik G, Yücel O, *et al*. Does chemical composition have an influence on the fate of intraperitoneal gallstone in rat? *Surg Laparosc Endosc* 1998;8:113.

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