British Journal of Healthcare and Medical Research - Vol. 12, No. 01
Publication Date: February 25, 2025
DOI:10.14738/bjhr.1201.18215.
Mohamed, A., Almotlaq, A. M., Alshamari, A. E., & Albuqaisi, A. A. (2025). Gallbladder Fossa Abscess Rare Complication Laparoscopic Cholecystectomy: A Case Report. British Journal of Healthcare and Medical Research, Vol - 12(01). 164-170.

Gallbladder Fossa Abscess Rare Complication Laparoscopic Cholecystectomy: A Case Report

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ABSTRACT

Gallbladder fossa abscesses are a rare serious complication of laparoscopic cholecystectomy. We present a 62-year-old male patient who had undergone laparoscopic cholecystectomy and subsequently developed a gallbladder fossa abscess. The diagnosis was confirmed by ultrasound and computed tomography (CT), and it was successfully treated with percutaneous catheter drainage and antimicrobial therapy.

Keywords: Laparoscopic cholecystectomy, Gallbladder fossa abscess, Percutaneous drainage.

INTRODUCTION

Since Erich Mühe from Böblingen, Germany, performed the first laparoscopic cholecystectomy in 1985, laparoscopic cholecystectomy has gained almost universal acceptance and is currently considered the gold standard for the treatment of symptomatic gallstones. Currently, laparoscopic cholecystectomy has completely replaced open cholecystectomy with the benefits of better patient outcomes, less morbidity, fewer infections, shorter hospital stays and earlier return to normal activity. Although laparoscopic cholecystectomy is a safe and effective treatment for most patients with symptomatic gallstones, it carries its own risks, including injury to the bowel and bile ducts, haemorrhage, sepsis and abscess formation. Gallbladder fossa abscesses are a rare complication of laparoscopic cholecystectomy and have been reported as a complication of the procedure in cases of acute cholecystitis, empyema of the gallbladder and intraoperative stone expulsion. We report a case of gallbladder fossa abscess following elective laparoscopic cholecystectomy in which no intraoperative bile or stones were spilled.

CASE REPORT

A 62-year-old male patient was referred to our surgical department for elective cholecystectomy after ERCP. He presented five days earlier with clinical and radiological

evidence of obstructive jaundice. He had an uneventful ERCP sphincterotomy with removal of several small stones and stenting of the common bile duct with a 5 mm French plastic stent. He had no pre-existing medical conditions and had never been operated on before. On admission to the surgical department, he was afebrile, fully awake and conscious. Pulse rate was 86/minute, blood pressure 130/80 and respiratory rate 16/minute. Abdominal examination was completely normal, with no tenderness or positive Murphy's sign. His blood tests results are shown in [table 1]

Variables	**Results**	**Normal values**
Haemoglobin	12.3 g%	12-16g%
White blood cell	8,300/mm3	4,000-10.500/mm3
Platelet	210,000/mm3	150-450/mm3
INR	1.25	0.9-1.1
APTT	11.6s	10.1-12.8
GLUCOSE RANDOM	6.9 mmol/L	4.1-7.1 mmol/L
BUN	4.1 mmol/L	3.2-8.2 mmol/L
BILIRUBIN (TOTAL)	18umol/L	5-21 umol/L
BILIRUBIN (CONJUGATED)	4.2	0-5
GGT	12 U/L	0-38
ALKALINE PHOSPHATASE	96 U/L	46-116
ALT (GPT)	18 U/L	7-40
ALBUMIN	36 g/L	34-50
TOTAL PROTEIN	62 g/L	57-82
AST (GOT)	22 U/L	12- 40
LIPASE	36 U/L	12-53
AMYLASE	96 U/L	30-118

The patient had an uneventful laparoscopic cholecystectomy. There was no bile leakage or stone spillage, but at the end of the procedure there was excessive oozing of blood from the gallbladder bed, which was controlled by coagulation and packing with SurgiCel™ [Ethicon]. He was discharged on the second postoperative day and was seen twice in the outpatient clinic where he was well and had no complaints.

The patient presented again to the emergency department 4 weeks after discharge complaining of fever, chills and loss of appetite. On examination, he was febrile with a temperature of 38.7 °C, a pulse of 110/minute and a blood pressure of 130/90. Abdominal examination was completely normal. Blood examination revealed a haemoglobin level of 10.5 grams/litre, white blood cell count was 13.6 x 10 and renal and liver enzymes were normal. The patient was admitted to the surgical ward and received cefuroxime 750 mg intravenously eight hourly. The abdominal CT scan showed a large collection in the Gallbladder fossa measuring 11.4 x 11.5 x 12.1 cm, adjacent to the duodenum and hepatic colonic flexure. There was no intra- or extrahepatic bile duct dilatation [figure 1,2&3].

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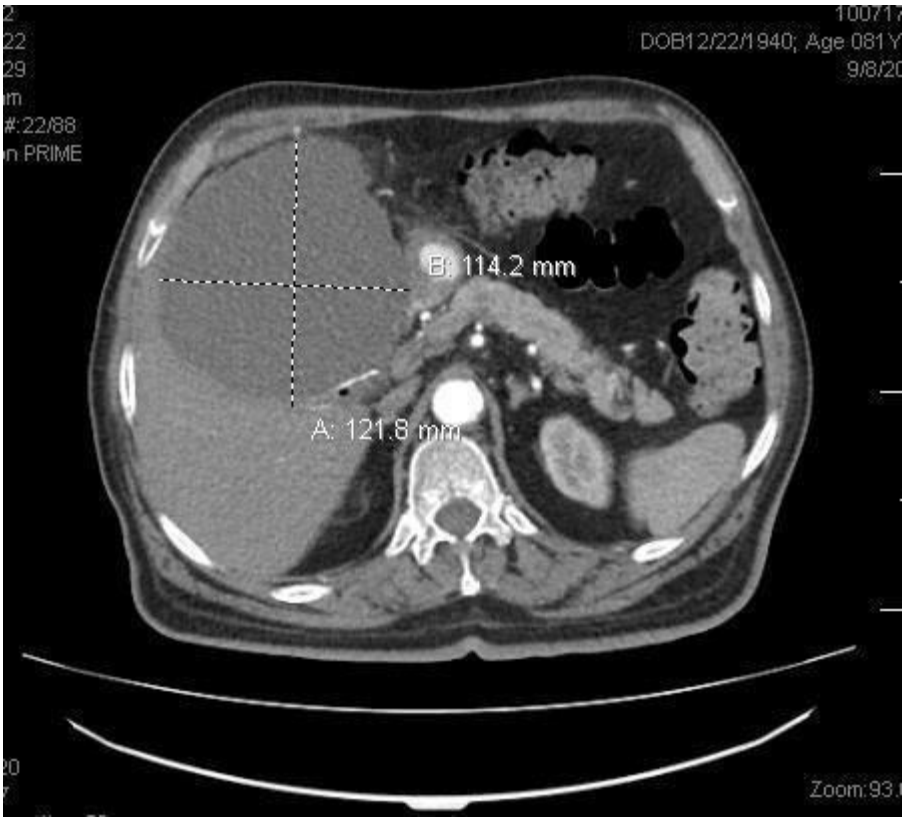

Figure 1: Abdominal CT scan (axial cut) showing gallbladder fossa abscess measuring 11.4 x 11.5 x 12.1 cm

Figure 2: Abdominal CT scan (coronary cut) showing the gallbladder fossa abscess adjacent to the duodenum and hepatic flexure of the colon.

Figure 3: Abdominal CT scan (sagittal cut) showing the same findings of figure 1&2

The patient had percutaneous drainage of the abscess, draining 600 ml of pus. The tail catheter was left in the abscess cavity for further drainage [Figure].

Figure 4: Abdominal ultrasound two weeks after percutaneous drainage showing reduction of the abscess size.

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He responded well to the antibiotic treatment and remained afebrile. The abdominal ultrasound examination two weeks after drainage showed a reduction in the previously seen gallbladder collection which now measured approximately 5.8 x 4.1 cm (figure 4). He was discharged after 2 weeks.

A further ultrasound examination after four weeks showed a further reduction in the size of the abscess (Figure 5) and an MRI examination after three months showed complete resolution of the abscess (figure 6).

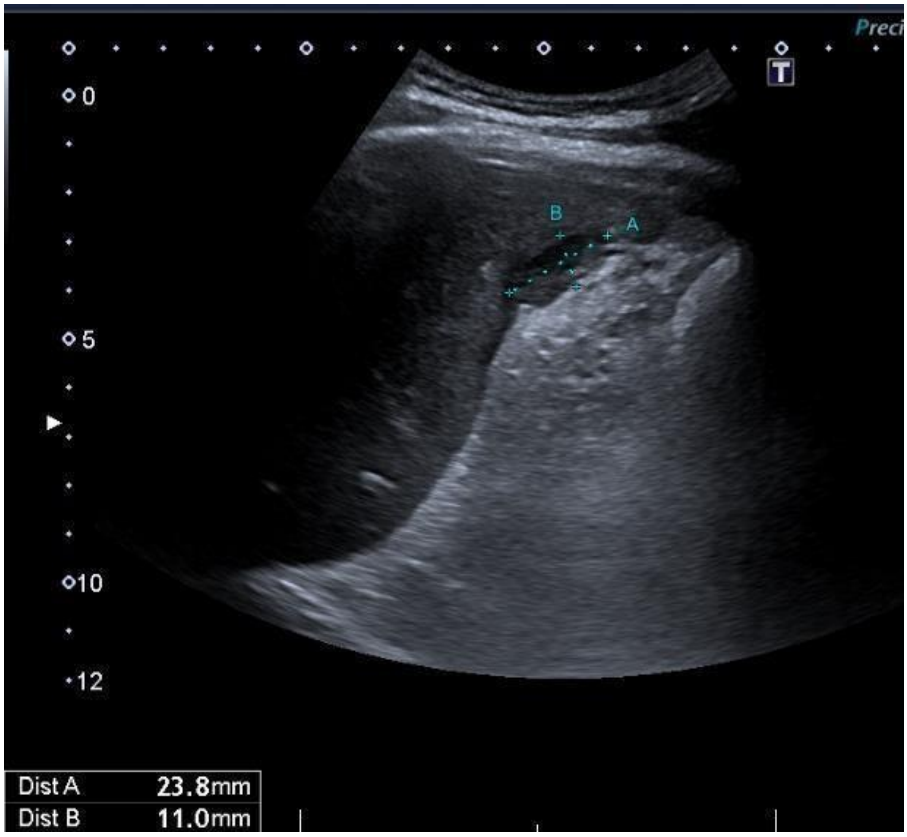

Figure 5: Abdominal ultrasound four weeks after percutaneous drainage showing further reduction of the abscess size.

Figure 6: abdominal MRI after six months showing complete resolution of the abscess

DISCUSSION

Laparoscopic cholecystectomy is currently considered the gold standard for the treatment of symptomatic gallstones and has almost completely replaced open cholecystectomy, with the advantages of better patient outcomes, lower morbidity, mortality, infections and shorter hospital stays. However, like any surgical procedure, laparoscopic cholecystectomy also harbours risks such as bleeding, injury to the surrounding tissue such as the duodenum and bile ducts, leakage of bile, stone expulsion and abscess formation [1].

Gallbladder fossa and intra-abdominal abscesses after cholecystectomy are rare and are usually reported in connection with perforation of the gallbladder and the spillage of stones during the procedure. They usually occur within a few weeks after cholecystectomy [2,3].

Perforation of the gall bladder occurs fairly frequently during laparoscopic cholecystectomy and is reported in the range of 10%– 40% in various series [4]. The incidence of gallstones spillage during laparoscopic cholecystectomy is less frequent, and the actual incidence of stones that are not removed is difficult to determine.

Intra-abdominal abscesses as a complication of laparoscopic cholecystectomy can manifest itself years after the initial procedure. Atri S, et al. [5] present a case of a gallstone intra-abdominal abscess that occurred 20 years after an open cholecystectomy.

In our case, the abscess occurred without gallbladder perforation, gallstone or bile leakage. We do not know the exact cause, but we think that the recent ERCP, the use of reusable instruments

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and the use of SurgiCel™, (foreign body) may have contributed to it. Gallbladder fossa abscesses are a serious complication of cholecystectomy and, if not detected early and treated correctly, can lead to serious complications such as cholangitis, generalized peritonitis and sepsis.

The symptoms of a gallbladder abscess can be very vague and only present so late after the operation that the diagnosis is difficult. Nevertheless, all patients presenting with fever, right upper quadrant pain and tenderness with elevated white blood cell count and inflammatory markers (e.g. C-reactive protein) should be suspected. The diagnosis can always be confirmed by ultrasound and computed tomography (CT), which not only show a space-occupying lesion but also indicate the location and size of the abscess. The CT scan has a higher sensitivity (97% sensitivity) than ultrasound (85% sensitivity) for detecting a liver abscess [6]. The less invasive image-guided percutaneous catheter drainage has largely replaced open surgery for the treatment of the condition. The choice of the appropriate antibiotic and duration of treatment depends on the isolated pathogen, and the susceptibility pattern.

CONCLUSION

Gallbladder fossa abscesses after cholecystectomy are a rare serious complication of laparoscopic cholecystectomy. They usually occur within a few weeks after cholecystectomy, but can also occur very late. A high index of suspicion is required for diagnosis. Ultrasound and computed tomography are good tools to confirm the diagnosis and provide further information on the exact location, size and suitability for percutaneous drainage. A combination of minimally invasive, image-guided percutaneous catheter drainage and appropriate antimicrobial therapy is sufficient treatment in most cases.

Declaration

We declare no conflict of interest and that the article has received no funding or grants from public, private or non-profit organizations.

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