Unusual presentation of gallbladder perforation

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A B S T R A C T
INTRODUCTION: Gall bladder perforation is associated with high mortality rates and therefore must be recognised and managed promptly. We present an unusual presentation of spontaneous gall bladder perforation.

CASE PRESENTATION: An elderly lady with multiple medical co-morbidities was admitted with sepsis following a fall. Initial assessment lead to a diagnosis of pneumonia, however a rapidly expanding right flank mass was incidentally noted during routine nursing care. Imaging studies were inconclusive, however incision and drainage of the mass revealed bile stained pus draining cutaneously from an acutely inflamed gallbladder. The patient made a good recovery following surgery, and was discharged with outpatient follow-up.

DISCUSSION: Despite focussed post-hoc history taking she denied any prodromal symptoms of cholecystitis. In addition to reporting an unusual cause for a common presentation, we highlight the importance of a full body examination in the context of sepsis, regardless of whether the source has been identified. In addition, we advocate that surgical intervention in sepsis should not be delayed by imaging in cases where an abscess is suspected.

CONCLUSIONS: Percutaneous abscesses arising from the gallbladder are a rare but potentially serious consequence of acute cholecystitis, and may present in a wide variety of locations. Therefore it is imperative to conduct a full body inspection in the septic patient, even when a source has been identified.

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1. Introduction

Early identification of the source is a critical step in the management of any patient with sepsis as it allows the timely administration of appropriate antibiotic therapy. In the elderly the usual culprits are the respiratory and urinary systems, however this case highlights the importance of keeping an open mind when assessing such patients as diagnostic prejudice can lead to delays in treatment and worsening of the clinical picture. Acute cholecystitis is a common abdominal cause of sepsis, however the signs and symptoms may not be initially apparent in the elderly.

2. Presentation of case

An 87 year-old lady presented to the Emergency Department with a head injury following a fall with a transient loss of consciousness. Her past medical history was notable for idiopathic Parkinson’s disease, ductal adenocarcinoma of the breast, primary hypertension, osteoarthritis and age-related macular degeneration.

On examination she was haemodynamically stable, but pyrexial at 38.8°C, with a saturation of 92% on two litres of supplemental oxygen via nasal cannulae. Her initial physical examination revealed only widespread inspiratory crepitations, with no other significant abnormalities. Blood tests showed a white cell count of 31.4 x 10⁹ L⁻¹ with a differential neutrophil count of 30.5 x 10⁹ L⁻¹, and a CRP of 133 Units. Her creatinine was mildly elevated at 102 Units. Following auscultation and a chest X-ray showing mild consolidation she was diagnosed with chest sepsis complicated by mild acute kidney injury in the emergency department, and was transferred to a medical ward where she received intravenous amoxicillin, fluids, and respiratory support. It was thought that the fall was a consequence of her pre-existing co-morbidities and concurrent acute illness.

On the second day of admission nursing staff noticed an undocumented firm, tender, dark red swelling, approximately 1 cm in diameter, on her right flank. This was initially felt to be a haematoma resulting from her fall, however the lump rapidly expanded over the course of the day, and a surgical opinion was sought. At the time of review the lump had a diameter of 5 cm, it was hot and erythematous with surrounding cellulitis and skin induration. A CT scan of the patient’s abdomen demonstrated a thick walled gallbladder with free fluid in the gallbladder fossa, and adjacent fat stranding in keeping with acute cholecystitis. Moreover,
the gallbladder fundus was seen extending close to the posterior abdominal wall where a 6 cm overlying soft tissue collection was identified, however there was no convincing communication between the two cavities. These radiological appearances were indicative of acute cholecystitis with a traumatic haematoma of the abdominal wall.

2.1. Treatment

As radiologically guided drainage was not available, the patient underwent surgical incision and drainage of the abdominal wall collection where 125 ml of bile-stained pus was released. The abscess cavity was washed out, and a drain was left in situ. A pus swab grew Escherichia coli, and the patient completed a five-day course of intravenous Co-Amoxiclav. She made an excellent recovery and the drain was removed on the eighth post-operative day. A follow-up ultrasound scan showed a thin-walled gallbladder contracted around a solitary 21 mm calculus. Additionally, a track of fluid was seen extending from the gallbladder fundus to the drain site, conclusively demonstrating a cholecystocutaneous fistula. Interestingly, on subsequent questioning, the patient denied any preceding symptoms of cholecystitis.

2.2. Outcome and follow-up

The patient was reviewed in clinic four weeks later, the drain had been removed and the patient had made a full recovery and back to her premorbid state. As the gallbladder had ruptured and drained itself percutaneously this natural course of events will suffice as treatment and no further management such as a cholecystectomy is currently required.

3. Discussion

Spontaneous rupture of the gallbladder is a well-documented complication of acute cholecystitis. In 1890, Courvoisier described 499 cases of gallbladder perforation, of which 169 had cholecystocutaneous fistulae [1], however, as few as 25 cases have been reported in the literature in the past 50 years [2]. This decline in incidence is likely due to improvements in imaging techniques, surgical treatments, and antibiotic availability in the intervening period.

Gallbladder fistulation usually occurs between internal cavities, and external fistulae are rare. Predisposing factors include biliary surgery [3], cholangiocarcinoma [4], trauma [5], or acute cholecystitis as in this case. When they do occur, external biliary fistulae are usually found in the right hypochondriac and lumbar regions, however other locations such as the right breast [6], groin [7], and glutal region [8] have been reported.

A recent report estimates morbidity and mortality of gallbladder perforation at 57.7% and 9.5% respectively [8]. Given the high complication rate of the condition, prompt diagnosis and intervention is crucial. Ultrasound scanning is the preferred imaging modality for both cutaneous collections and the biliary tree, however our department did not have access to sonography out-of-hours. As a result, the patient underwent a CT scan which did not provide a conclusive diagnosis. Fortunately this did not preclude the patient from receiving the appropriate treatment, illustrating the importance of empirical intervention without relying on pre-operative imaging which can introduce unnecessary delay. Additionally, this case highlights the importance of a full head-to-toe approach to physical examination when assessing any unwell patient, particularly in the context of sepsis.

4. Conclusions

Percutaneous abscesses arising from the gallbladder are a rare but potentially serious consequence of acute cholecystitis, and may present in a wide variety of locations. Here we present a case of “silent cholecystitis which is a rare but significant cause of sepsis”. We demonstrate the paramount importance of conducting a full body inspection in the septic patient, even when a source has been identified as there may be a dual source of sepsis as was evident in our patient. Early surgical intervention is invaluable in suspected abscesses, regardless of the availability of pre-operative imaging.

Conflicts of interest

None.

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Ethical approval

None.

Consent

Consent from the patient has been obtained.

Authors contribution

Gihan and James—Initial write up and redrafting of case report.
Yasser Abdul-Aal—Editor of final draft.

Guarantor

Gihan Jayasinghe, James Adam and Yasser Abdul-Aal.

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