

Case Report

An unusual case of type II spontaneous gallbladder perforation presenting as a right iliac fossa mass.

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Introduction

Gallbladder perforation (GBP) is a rare clinical entity which is almost exclusively identified as a complication of cholecystitis [1,2]. It is shown to be associated with cholelithiasis in more than 85 per cent of cases [2]. Clinical diagnosis of an acute or type I GBP can be challenging as the patient commonly presents with features of peritonitis, without the clinical features typical of gallbladder involvement. Subacute or type II GBP results in localized fluid collection and abscess formation at the perforation site, drawing attention to the gallbladder [2,3,4].

Right iliac fossa (RIF) masses present diagnostic dilemmas, especially in the elderly, mainly due to the wide range of clinical manifestations related to the anatomical organs in the region [5]. Although there are instances of gall bladder masses presenting in the RIF region, a literature search did not return any cases of GBP presenting as a RIF mass. Thus, such presentations seem to be quite rare.

Here we describe a case of type II GBP secondary to a periampullary growth presenting as a RIF mass

Case Presentation

A previously healthy, 84-year-old female presented to the surgical casualty with a history of pain and fullness over the right lower abdomen associated with dyspepsia for about one month. She reported severe loss of appetite and loss of weight and felt feverish on and off.

Clinical examination revealed a cachectic, afebrile and non-icteric patient. She was haemodynamically stable. Abdominal examination revealed a mass in RIF which was firm in consistency and fixed to the deeper planes. Table 1 shows her laboratory reports.

Table 1: Laboratory investigations on admission

	value (reference range)
WBC	18.51×10 ³ (4-10x 10 ³)
Hb	9.5g/dL(11-16g/dL)
Platelet count	310×10 ³ (100-300x10 ³)
C-Reactive protein	194.4mg/dL(0-6)
Blood urea	9.25mmol/L(2.8-7.2mmol/L)
ALT	14.6U/L(<45U/L)
AST	19.3U/L(<35U/L)
Total serum bilirubin	13.8μmol/L(3.4-17.1μmol/L)
Direct bilirubin	17.3μmol/L(<5.1μmol/L)
Indirect bilirubin	3.5μmol/L(<12μmol/L)
ALP	92.6U/L(30-120U/L)
Serum sodium	131mmol/L(136-146mmol/L)
Serum potassium	4.1mmol/L(3.5-5.1mmol/L)

Ultrasound scan (USS) of abdomen was inconclusive as to the possible origin of the mass. However, it did reveal the possibility of an inflammatory bowel mass or a contained abscess. Erect chest and supine abdomen X-rays were normal. Non-operative management was initiated with intravenous broad-spectrum antibiotics and intravenous fluids.

Contrast-enhanced computed tomography (CECT) of the abdomen (Figure 1 a, b & c) revealed a multiloculated cystic mass with an enhancing wall, measuring 11×17×21cm, in the right side of the lower abdomen. It opened superiorly into a defect of the gall bladder wall. It also revealed a peri-ampullary mass measuring 2.3×2.6cm, causing distension of the distal pancreatic duct, common bile duct, and the intra- and extra-hepatic ducts. A few enlarged para-aortic lymph nodes were noted. There were no focal liver lesions. After the initial workup, the diagnosis of a perforated gall bladder with a localized collection in the RIF region was made. Since the patient was deemed a poor candidate for open surgery, USS guided aspiration and drain insertion was arranged.

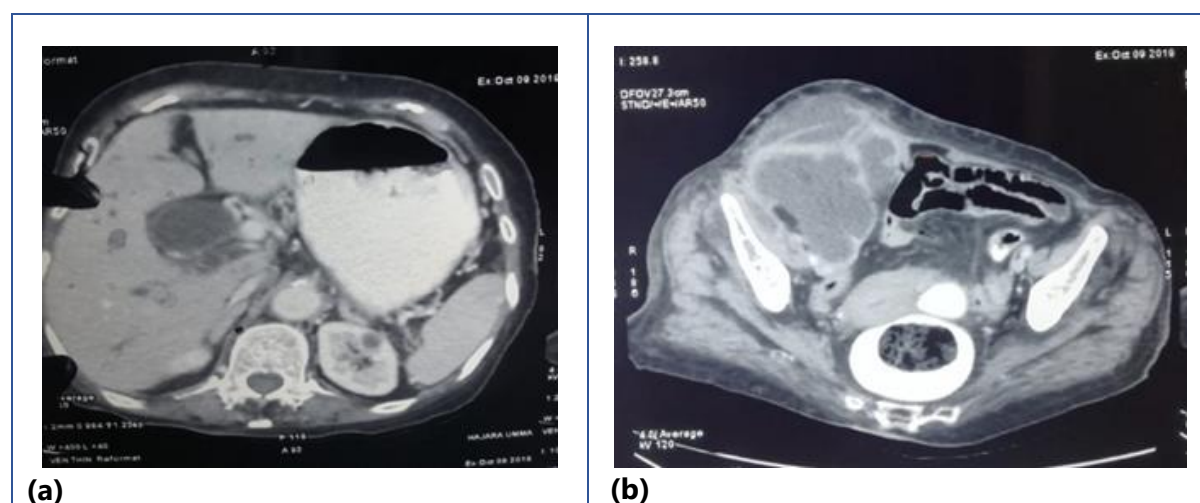
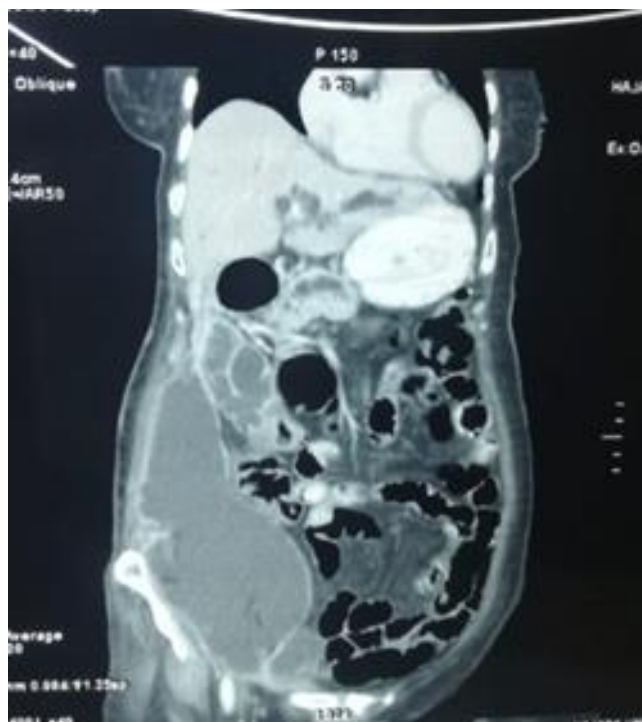


Figure1: CECT abdomen - cross section of abdomen showing GBP with pericholecystic (a) and RIF collection (b)



(c)

Figure 1 (c): CECT abdomen -coronal section of abdomen showing RIF collection

The patient left against medical advice while awaiting endoscopic retrograde cholangio-pancreaticogram. (ERCP)

Discussion

The anatomical iliac fossa is bounded above by the iliac crest, below by the arcuate line; in front and behind by the anterior and posterior borders of the ilium. A mass in the right iliac fossa can be intra-abdominal or extra abdominal in origin. Anatomical structures in the RIF include the distal ileum, caecum, vermiform appendix, iliac lymph nodes, iliac vessels and retroperitoneal connective tissue. Common causes of mass formation in the region in the elderly include appendicular mass or abscess, ileo-caecal tuberculosis, right colonic tumor, caecal diverticulitis with peri-diverticulitis, inflammatory colitis with abscess formation or pseudotumor and gynaecological pathology in women [5].

GBP can occur spontaneously or due to trauma. It could also be iatrogenic. Spontaneous GBP is subclassified as idiopathic or secondary. GBP can be secondary to cholelithiasis, inflammation, infection, and obstruction [1,6]. The commonest cause for spontaneous GBP found in the literature is cholecystitis, with or without calculous disease [6,7].

Clinical presentation of GBP can be classified according to the Niemeier classification [6,8,9].

Type I – GBP and generalized biliary peritonitis, acute

Type II – GBP with pericholecystic abscess and localized peritonitis, sub-acute
Type III- GBP with cholecystoenteric or cholecystocutaneous fistula, chronic

Several modifications have been made to the Niemeier classification but the basic classification is still valid [6,10]. In younger patients (<50 years) Type I and Type II GBP are more common whereas type III is mostly found in the elderly [6,11]. According to CT evidence the patient had type II GBP with a localized collection in the RIF region which presented as a RIF mass, which is not previously recorded in the literature.

The other interesting finding in this patient is the peri-ampullary growth with significant proximal biliary duct dilation. Peri-ampullary growths usually present with a history of progressive obstructive jaundice associated with constitutional symptoms such as loss of weight and loss of appetite. Acute manifestations of this type of biliary obstruction are rare [12]. Distal obstruction of the biliary tract due to the peri-ampullary growth compounded by reduced vascularity in old age probably predisposed to spontaneous GBP in this presentation.

Imaging plays a major role in making an accurate diagnosis of GBP [12,13]. Ultrasound scan and CT scan are important imaging modalities in GBP. CECT is superior to USS in identifying gallbladder wall defects, with a detection rate of 70% [12].

This patient was not a good candidate for major surgery owing to her age and poor nutritional status at presentation. USS guided drainage of the infected RIF collection is a safer alternative to stabilize her condition prior to further evaluation for definitive therapeutic options. The definitive surgical treatment of a malignant peri-ampullary lesion is Whipple's operation, a major procedure requiring the patient to be anaesthetically and surgically quite fit. ERCP is a safer alternative in expert hands to relieve the biliary obstruction allowing the patient to recover nutritionally. It can also be used as a palliative option if the tumour is non-resectable, or if the patient is unfit to withstand major operation [14,15].

Conclusion

Masses in the right iliac fossa are common and may arise from a number of pathologies in different organs. The definitive diagnosis may pose a challenge if the cause is unusual. Gallbladder perforation is a rare entity and is an uncommon presentation of peri-ampullary growths. The clinician may be distracted by the presentation of a 'mass' in the iliac fossa, as other pathologies are far commoner in this scenario. This case highlights the importance of timely and judicious use of cross-sectional imaging in evaluating cases of RIF masses in order to avoid unnecessary acute surgical interventions.

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