

# SPONTANEOUSLY PERFORATED GALL BLADDER WITH BILOMA FORMATION IN A DIABETIC MANAGED CONSERVATIVELY; IMAGING FINDINGS

Muhammad Umar Amin<sup>1</sup>, Shoaib Ahmad<sup>2</sup>, Mohsin Saif<sup>3</sup>

<sup>1</sup> Radiology and Imaging Department, Combined Military Hospital, Attock, Pakistan.

<sup>2</sup> Combined Military Hospital, Attock. Pakistan.

<sup>3</sup> Combined Military Hospital, Attock. Pakistan.

PJR October - December 2008; 18(4): 121-124

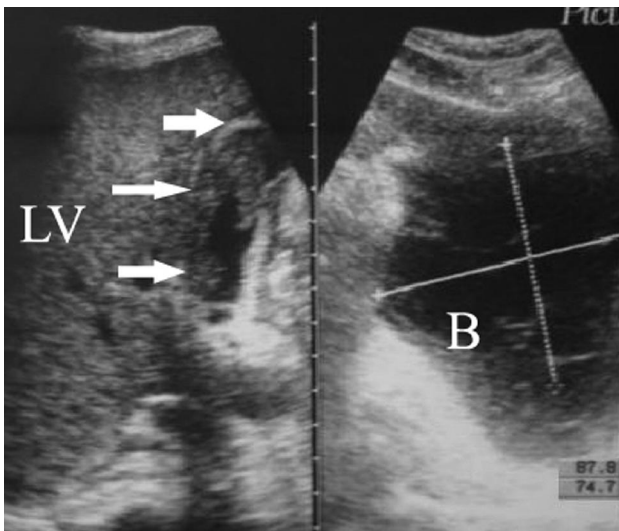
## ABSTRACT

We report a rare case of perforation of the gall bladder due to gall stones and acute calculous cholecystitis with large biloma formation. The patient was managed conservatively.

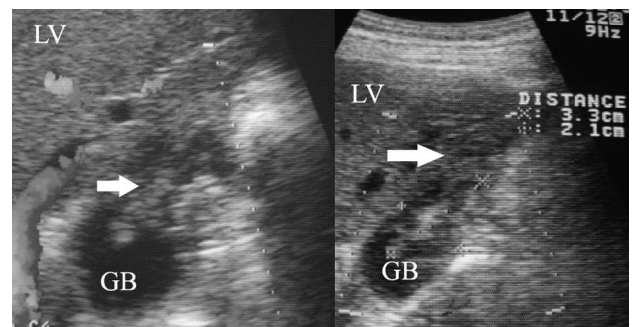
## Case Report

A 60 years-old diabetic male, presented with vomiting and pain in the right hypochondrium for 3 days. The patient was referred for an urgent ultrasound which revealed a fluid collection with imperceptible borders in the region of left lobe of the liver (Fig 1).

It measured 8.7 x 7.4 cm. Few floating septae were also observed in this fluid collection. Gall bladder was normally distended with thick walls. Irregular, immobile structure measuring 3.3 x 2 cm devoid of any acoustic shadowing was observed in the gall bladder lumen. Color Doppler revealed no flow within this structure (Fig 2).



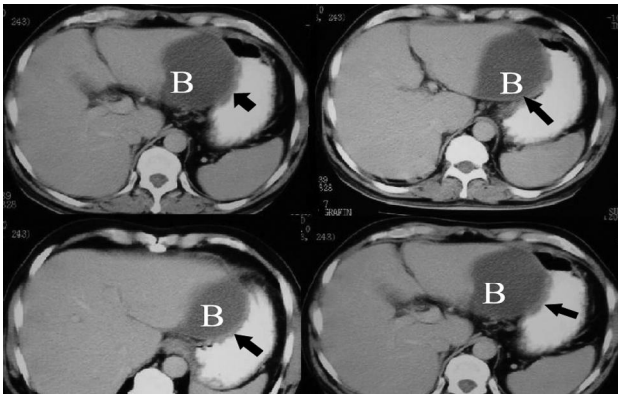
**Figure 1:** Ultrasound at initial presentation showing mass like inflammatory lesion within the lumen of the gall bladder (arrows). Biloma (B) in the left lobe of the liver measuring 8.7 x 7.4 cm due to perforated gall bladder.



**Figure 2:** Color Doppler ultrasound showing avascular inflammatory lesion (white arrow) within the gall bladder (GB) measuring 3.3 x 2.1 cm.

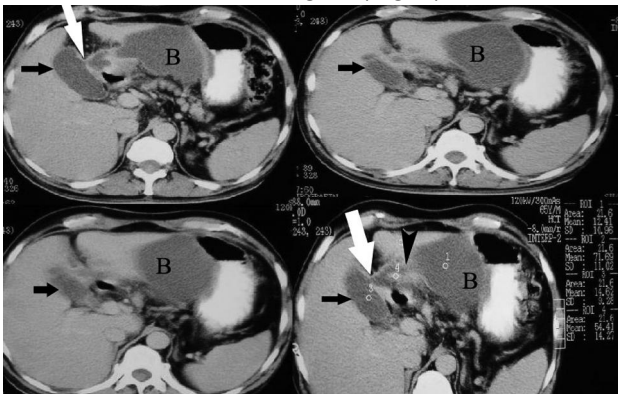
**Correspondence :** Dr. Muhammad Umar Amin  
Department of Radiology,  
Combined Military Hospital,  
Bahawalpur, Pakistan.  
Tel. No.: 0300-4902037  
E-mail: umar1971@hotmail.com

A CT scan was performed which revealed a large fluid collection in the left lobe of the liver with mass effect on the lesser curvature of the stomach (Fig. 3).



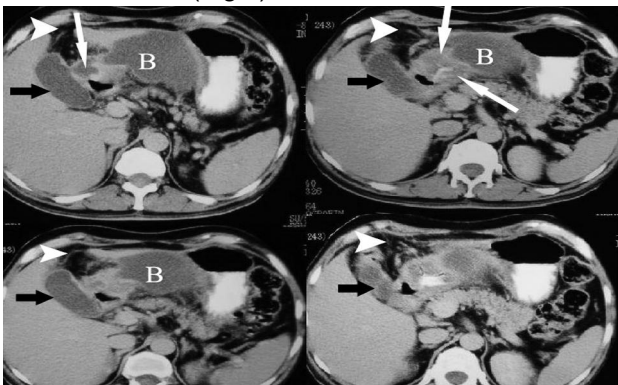
**Figure 3:** Contrast enhanced CT scan of the liver .Biloma (B) seen between the liver and lesser curvature of the stomach (black arrow).

The gall bladder showed a perforation which was seen as a small disruption of the medial wall of the gall bladder close to fundal region (Fig. 4).



**Figure 4:** Contrast enhanced CT scan of the liver. Black arrow=Gall bladder. Large white arrow = Site of perforation. Black arrow head = tract of bile extending from the gall bladder to biloma. B = Biloma. Note same density (21.6) of the bile in the gallbladder, tract of bile and biloma

Leakage of bile was seen forming two channels .One channel was extending to the fluid collection in the left lobe of the liver (Fig 5).



**Figure 5:** Contrast enhanced CT scan of the liver. White arrowhead = pericholecystic fat stranding, Black arrow = gall bladder, Long white arrow =thick walled duodenum containing contrast in the centre. Biloma (B)

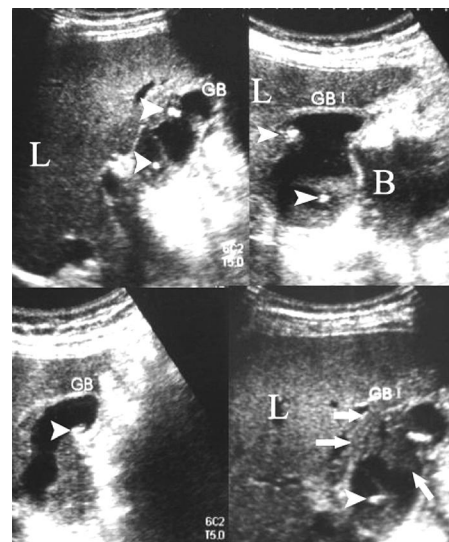
Second channel was seen extending into the wall of the second portion of the duodenum. The duodenal first and second parts had thick walls. The wall of the pylorus was thickened as well. In addition, there was marked pericholecystic and perigastric fat stranding. Hepatic flexure of the colon was incontact with the gall bladder and revealed circumferential thickening of its walls (Fig. 6).



**Figure 6:** Contrast enhanced CT scan of the liver. White arrow = thick walled hepatic flexure of the colon with surrounding fat stranding. White arrowhead=Gall bladder. Asterisk=Thick walled duodenum.

Pancreas was normal and there was no intra or extrahepatic biliary dilatation.

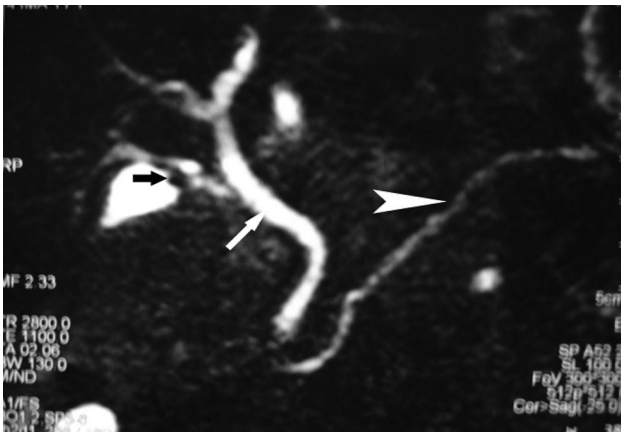
It was decided to manage the patient conservatively at this stage. Patient was managed with antibiotics and analgesics. Patient was discharged with advice to follow up.



**Figure 7:** Ultrasound of the gall bladder at second presentation.White arrowheads = gall stones, arrows = Inflammatory tissue inside gall bladder.

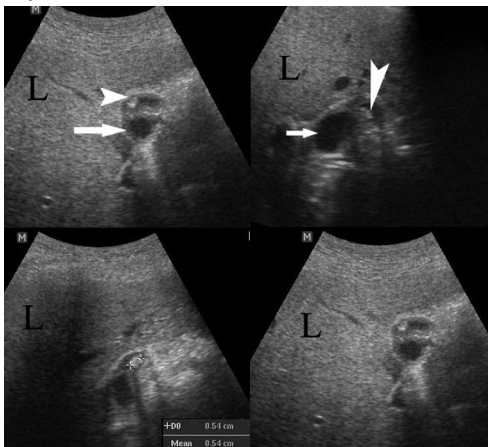
Patient again presented with vomiting and pain in the right hypochondrium after 01 month. Ultrasound was performed which revealed a contracted gall bladder with uneven wall thickening, sludge, inflammatory mass and calculi. (Fig 7) An ill defined heterogeneous area was seen between gall bladder and duodenum which was also invading the wall of the duodenum. Few small fluid areas were also seen in this area. Patient was labelled as a case of acute cholecystitis with localized perforation and formation of an inflammatory mass.

Magnetic Cholangiopancreatography (MRCP) was performed (Fig 8) which revealed contracted gall bladder with focal filling defect measuring 40 x 30 mm in size. Common bile duct, right and left hepatic ducts and intrahepatic biliary channels were normal. Pancreatic duct was normal.



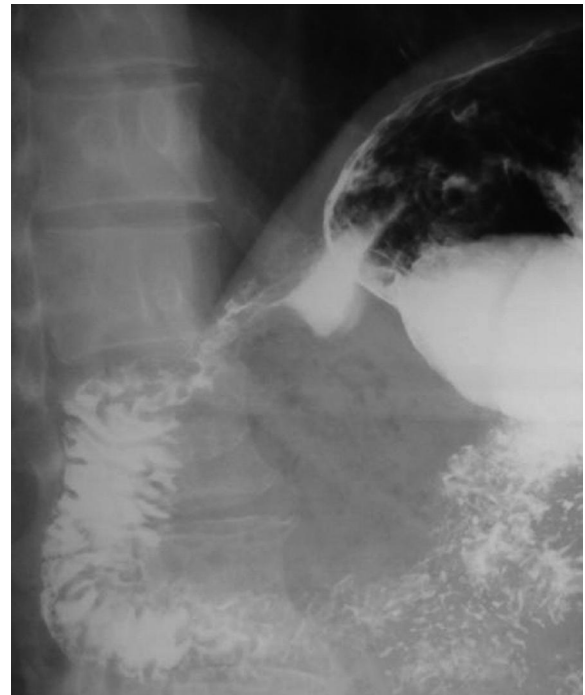
**Figure 8:** Magnetic Resonance Cholangiopancreatography (MRCP) showing filling defect within the gall bladder. Arrow = normal CBD, Arrowhead = Normal pancreatic duct

Patient was discharged with advice to continue tab bexus, and syp gravinate and was advised to have a follow up scan after one month.



**Figure 9:** Recent ultrasound of the patient showing calculi (arrowheads) within the gall bladder. Septation of the gall bladder is seen with clear bile seen in one segment (arrow).

His ultrasound scan one month later revealed complete disappearance of the biloma. In addition gall bladder showed two compartments (Fig 9). The larger compartment contained clear bile and smaller compartment near the fundus, showed thickened walls and calculi. A barium meal was performed which revealed normal appearing stomach and duodenum with no evidence of any leak of the contrast. (Fig 10) Presently the patient is symptom free.



**Figure 10:** Barium meal revealing no extension of contrast outside the lumen of duodenum.

## Discussion

Bilomas, or extrabiliary collections of bile, have been reported to occur as a result of biliary surgery, endoscopic retrograde cholangiopancreatography (ERCP) procedures, laparoscopic cholecystectomy, trauma and spontaneously.<sup>1</sup> Gall bladder perforation (GBP) is a rare but life-threatening complication of acute cholecystitis. The early diagnosis and treatment of GBP are crucial to decrease patient morbidity and mortality. Perforation can happen at the neck from pressure necrosis due to an impacted calculus, or at the fundus as occurred in our patient. It can result in a local abscess, or perforation into the general peritoneal cavity. If the bile is infected, diffuse peritonitis may occur readily and rapidly and may result in death. An estimated 10% of people with acute cholecystitis



have a perforated gallbladder. In general, this occurs in people who wait too long to seek help or who do not respond to treatment. This condition is most common in people with diabetes as was seen in our patient.

The clinical presentation of gallbladder perforation is often indistinguishable from uncomplicated cholecystitis. Ultrasound and CT are used to diagnose suspected gallbladder perforation. Recently MRI scan also has been suggested as more accurate than these two conventional imaging techniques. On CT and sonography, the bilomas are well demarcated, but most did not have an identifiable capsule.<sup>3</sup>

The diagnostic criterion for gallbladder rupture on the CT scans is gallbladder wall disruption, local fluid collection surrounding the gallbladder wall combined with contrast enhancement of the gallbladder wall and a desmoplastic reaction in the area surrounding the gallbladder.<sup>2</sup>

The clinical presentation of gallbladder perforation may range from an acute generalized peritonitis to benign non-specific abdominal symptoms. Clinical differentiation between gallbladder perforation and uncomplicated cholecystitis can often be difficult because the bile leak from a ruptured gallbladder might be contained in the extra peritoneal gallbladder fossa, and hence might not produce symptoms of peritonitis immediately.<sup>4</sup> Most studies of perforation of the gallbladder deduce that the wall of the gallbladder following perforation appears distended, thickened, oedematous and on occasion fails to be identified.<sup>5</sup>

## References

1. Fujiwara H, Yamamoto M, Takahashi M, et al. Spontaneous rupture of an intrahepatic bile duct with biloma treated by percutaneous drainage and endoscopic sphincterotomy. *Am J Gastroenterol* 1998; **93**:2282-4.
2. Chun-Hsiung Chou, Tai-Youeng Chen, Huny-Ben Pan, Jer-Shyung Huang. Computed Tomography Scanning for Diagnosing Gallbladder Rupture: Experience with 64 Cases. *Chin J Radiol* 2000; **25(1)**:13-6.
3. Vazquez JL, Thorsen MK, Dodds WJ, Quiroz FA, Martinez ML, Lawson TL, Stewart ET, Foley WD. Evaluation and treatment of intraabdominal bilomas. *AJR Am J Roentgenol.* 1985; **144(5)**:933-8.
4. Sood B, Jain M, Khandelwal N, Singh P, Suri S. MRI of perforated gallbladder. *Australas Radiol* 2002; **46**: 438-40.
5. Morris B S, Balpande P R, Morani A C. The CT appearances of gallbladder perforation. *BJR* 2007; **80**: 898-901.