

Case Report

Biloma a pseudocyst mimic

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ABSTRACT

Biloma is defined as an encapsulated collection of bile inside or outside of the biliary tree within the abdominal cavity. We report a case of a 56 years old male presented with complaints of abdominal distention and abdominal pain for 1 month whom on initial imaging, a diagnosis of pseudocyst of pancreas was suspected but on further imaging with MRCP, a biloma formation was found. Intervention involving Hepatobiliary tree is the most common etiology of a biloma formation. Biloma can also be caused by abdominal trauma and choledocholithiasis. In terms of treatment, small and uncomplicated cases need no intervention as spontaneous resolution is expected and in severe cases a combined approach using percutaneous drainage of biloma and endoscopic retrograde cholangiopancreatography (ERCP)-guided biliary stent placement across the site of the biliary leak or surgical hepaticojejunostomy or just image guided percutaneous drainage alone would be the treatment choice. Biloma should be included in the differential diagnosis of a large cystic lesion of the abdomen.

Keywords: Biloma, Spontaneous bile leak, Complications of hepatobiliary interventions, Percutaneous drainage, Pseudocyst mimic

INTRODUCTION

Biloma is defined as an encapsulated collection of bile inside or outside the biliary tree within the abdominal cavity. It is a very rare entity with an incidence of 0.3-2%.⁶ Biloma usually occurs after an intervention involving the biliary tree and most commonly collects in the subhepatic space.⁶ More than 50% biloma originates from cystic duct. Biloma formation without an intervention procedure is described as a spontaneous bile leak and has a high mortality and morbidity if not diagnosed early.^{7,8} Etiologies include hepatobiliary interventions, abdominal trauma, choledocholithiasis and the rare spontaneous bile leak which is usually a diagnosis of exclusion.⁹ Clinical signs and symptoms vary from an asymptomatic patient with an incidental finding to a large cyst involving all quadrants of abdomen with also presentations like abdominal pain, abdominal fullness, jaundice, fever and even peritonitis.⁹ Sensitivity of various imaging investigations in diagnosing biloma are as follows:

Table 1: Sensitivity of investigations.¹⁰

Variables	Percentages (%)
USG	70
CT	90
MRI	95
Hepatobiliary iminodiacetic acid (HIDA)	97

HIDA is the diagnostic investigation of choice in Spontaneous bile leak cases.¹¹ In terms of treatment, small and uncomplicated cases need no intervention as spontaneous resolution is expected and in severe cases a combined approach using percutaneous drainage of biloma and ERCP-guided biliary stent placement across the site of biliary leak or surgical hepaticojejunostomy or just image guided percutaneous drainage alone would be the treatment choice. Drainage of biloma may take 2-3 months. We herein present a rare case of biloma presenting as a cystic mass involving almost all quadrants of abdomen in a 56 years old male patient.

CASE REPORT

A 56 years old male was referred from another hospital to our casualty with complaints of abdominal distention, abdominal pain and vomiting for a duration of 1 month, history of loss of appetite was present, history similar illness a year ago was also present. Patient denied history of altered bowel habits, micturition abnormalities, fever, abdominal trauma and prior abdominal surgeries. Patient had no known comorbidities. Patient was a known smoker and alcoholic for 20 years. Clinical examination of the patient revealed a 15×10 cm cystic mass predominantly involving epigastric and periumbilical region extending 1 cm below xiphoid process to 3 cm below umbilicus. Laboratory workup was significant for elevated urea and creatinine levels (urea-111; creatinine-2.9).

Table 2: Investigations before percutaneous drainage.

Parameters	Variables	
WBC	11900	9100
HB	10.4	10.1
PLT	4.21 l	4.61 l
Urea	111	25
Creatinine	2.9	0.8
Total bilirubin	0.8	0.9
Direct bilirubin	0.6	0.6
SGOT	14	12
SGPT	10	8
ALP	108	91
Total protein	8.3	6.9
Albumin	3.5	3.2
Serum sodium	132	132
Serum potassium	4.3	3.9
Amylase	36	20
Lipase	11	9

Note: On admission, patient had elevated renal parameters which normalized with adequate hydration (a).

Complete blood count, liver function test and serum electrolytes, amylase and lipase were unremarkable. Ultrasound abdomen and pelvis revealed an 18×10 cm cystic lesion, probably pseudocyst of pancreas, contracted gallbladder, echogenic sludge in gallbladder. CECT abdomen and pelvis revealed large lobulated thick-walled cystic lesion involving epigastrium and anterior pararenal space of size 17×9 cm, pancreas appears atrophic with multiple calcifications in body and head, dilated CBD with upstream dilation of biliary system and intrahepatic biliary radicals' dilation.

MRCP of the patient revealed a large walled off intraperitoneal collection with debris and air pockets measuring 17×15×4.7 cm extending from gallbladder fossa encasing the gallbladder and extends into greater omentum at subhepatic space, epigastric and umbilical region-could represent biloma, dilated CBD 14 mm with debris within and chronic calcific pancreatitis with no obvious site of bile leak was found.

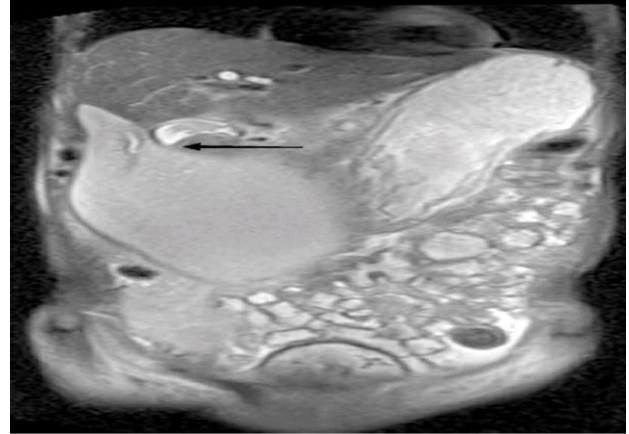


Figure 1: T2 weighted image coronal section showing hyperintense collection noted tracking from the gallbladder fossa into the subhepatic space.

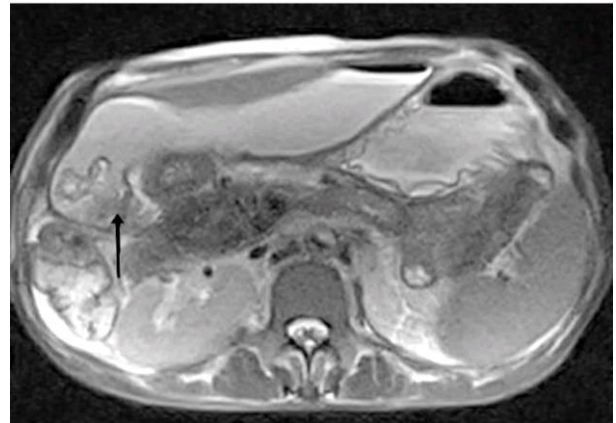


Figure 2: T2 weighted image axial section showing hyperintense collection in the pericholecystic region.

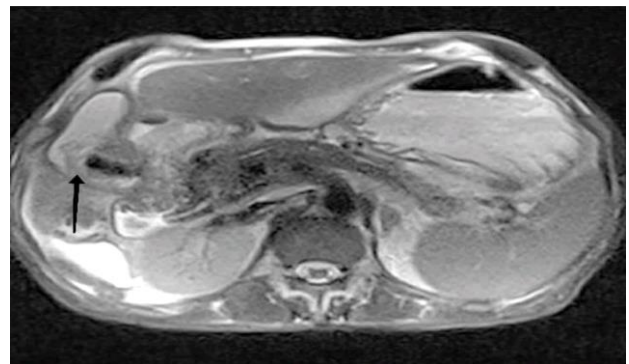


Figure 3: T2 weighted image axial section showing hyperintense collection tracking from the gallbladder fossa into the peritoneal space.

Patient was taken up for USG guided drainage of the collection. A 10 Fr Pigtail catheter was inserted and the first day output was 800 ml. Subsequently the patient had a constant daily output of 300 ml for 28 days. Then for 3 days patient output started declining gradually and became Nil output for 2 days and pigtail was removed.

Table 3: Investigations after percutaneous drainage.

Parameters	Variables	
WBC	8900	8700
HB	8.9	9.8
PLT	3.96 l	4.11 l
UREA	24	26
Creatinine	0.8	1.0
Total bilirubin	0.6	0.7
Direct bilirubin	0.2	0.2
SGOT	15	17
SGPT	10	10
ALP	96	76
Total protein	6.4	7.1
Albumin	3.1	3.2
Serum sodium	132	134
Serum potassium	3.4	3.8
Amylase	20	36
Lipase	9	11

Note: Hemoglobin drop was noted post percutaneous drainage which needed a blood transfusion (b).

Table 4: DT fluid analysis.

Percutaneous drainage fluid analysis	
DT fluid amylase	10
DT fluid lipase	19

Note: DT fluid cytology-cellular smears showing sheets of neutrophils, lymphocytes, histiocytes, no evidence of malignant cells noted (c).

Thereafter, the patient's symptoms completely resolved, and he was discharged home. Upon follow-up, four weeks after the intervention, complete resolution was ensured.

DISCUSSION

A biloma was first reported in 1979 by Gould et al as an encapsulated extrahepatic biliary collection.¹² The term biloma was extended to include an encapsulated bile collection outside the biliary tree, either extrahepatic or intrahepatic.¹¹ The pathophysiology of SBL remains to be elucidated; however, persistently increased pressure in the intra- or extrahepatic biliary duct, biliary obstruction, or infarction are the suggested risk factors in biloma formation.^{13,14} The clinical presentation of biloma is variable from non-specific abdominal pain to severe biliary sepsis, with the severity depending upon the location, size, and underlying etiology of the biloma.^{2,5} Biloma with traumatic or postsurgical etiologies are usually larger in size and these patients usually present earlier to seek medical attention due to more readily seen symptoms.⁶

According to the study by Vazquez et al bile collection is usually encapsulated when it occurs quickly in a short period and it can cause peritonitis, but if the leakage and collection occur slowly, there is only mild inflammation of biliary tract and peritoneum.⁶

During 1979-1997, Fujiwara et al reported 25 cases of spontaneous biloma and his study showed, there are various causes of biloma including obstructive jaundice, cholecystitis, cholangiocarcinoma, choledocholithiasis, liver abscess, tuberculosis and nephrotic syndrome.⁶ In his study, 11 cases had biloma in the left hepatic lobe, 11 patients had right hepatic lobe involvement, and the remaining four cases had upper abdomen biloma. However, in our case report, the exact location of biloma was found to be in subhepatic space which is the most common site.

Biloma can be infected and cause serious and life-threatening complications such as peritonitis, biliopleural fistula which can lead to empyema, bilhemia (the fistula between veins and bile ducts inside liver, resulting in severely elevated bilirubinemia), and hemobilia (the arterial pseudoaneurysm rupture into the biliary system resulting in upper gastrointestinal hemorrhage).

The patient in this case report had a large cystic lesion in abdomen which was clinically and radiologically misdiagnosed as a case of pseudocyst of pancreas and was picked up as a case of bilioma in MRCP. Since no known cause of biloma was found, it could be a case of spontaneous bile leak which resolved. Since it was a symptomatic large biloma formation, USG guided percutaneous drainage was done which resulted in complete resolution of symptoms. Even though percutaneous drainage can also be done in pseudocyst of pancreas in a fragile patient, endoscopic or surgical drainage would be the preferred choice and hence differentiating bilioma from pseudocyst of pancreas helps in giving the preferred treatment for the patient.¹⁵

CONCLUSION

Biloma is a rare medical condition. Biloma should be included in the differential diagnosis of a large cystic lesion of the abdomen. A combined approach of image guided biloma drainage and ERCP guided stenting across the site of bile leak have higher complete resolution rate than either approach alone. USG guided percutaneous drainage alone is an affordable option with excellent results.

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