

## Case Report

# Gallbladder Metastases: A Report of Two Cases

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## Keywords

Breast cancer · Metastasis · Multiple myeloma

## Abstract

**Introduction:** Metastasis to the gallbladder is not common and usually manifests an advanced stage of malignancy. Herein, we report a case of triple negative high grade invasive ductal carcinoma of breast with a metastatic lesion to the gallbladder. **Case Presentation:** The patient is a 52-year-old female diagnosed with invasive ductal carcinoma treated with mastectomy and chemotherapy. After 12 months, she presented to the emergency department with right upper quadrant pain and elevated liver chemistries. Abdominal enhanced computed tomography showed periportal and gallbladder wall edema. After cholecystectomy, the resected gallbladder was histologically considered to be a metastatic lesion arising from the primary lung cancer. The second case describes a case of a 77-year-old woman with multiple co-morbidities who presented to the hospital with sepsis secondary to biliary source. Abdominal enhanced computed tomography findings were concerning for acute cholecystitis. After cholecystectomy, the pathology of the resected gallbladder demonstrated cholecystitis and plasmacytoma. **Conclusion:** The atypical presentation of gallbladder metastases could mislead treating providers. The diagnosis might alter management decisions and prognosis.

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## Introduction

Metastatic gallbladder tumors are rare. Findings are similar to primary gallbladder tumors on abdominal imaging but the management is different. Here, we describe 2 cases of metastatic gallbladder tumors from breast cancer and multiple myeloma.

### Case 1

A 77-year-old woman with past medical history significant for diabetes mellitus, hypertension, Hypercholesterolemia, recent deep venous thrombosis; presented the emergency room with a 5-day history of worsening shortness of breath, nausea, vomiting, and minimal urine output. She was found to have hypothermia and hypotension and she quickly decompensated requiring endotracheal intubation and vasopressors. Significant laboratory study results showed a total bilirubin level of 2.0 mg/dL, alkaline phosphatase of 900 U/L, aspartate aminotransferase and alanine aminotransferase levels of 45 and 94 U/L, respectively, white blood counts of 23 K/ $\mu$ L, potassium of 7.8 mmol/L, creatinine of 14.35 mg/dL and urea nitrogen of 116 mg/dL. Continuous renal replacement therapy was initiated, and Computed tomography scan of the abdomen and pelvis was obtained which demonstrated distention of the gallbladder with gallstones and mild thickening of the wall concerning for acute cholecystitis (Fig. 1A). The patient was started on broad spectrum antibiotics to treat sepsis from biliary source. She underwent percutaneous cholecystotomy followed by endoscopic retrograde cholangio-pancreatography with balloon sweep since the tube was poorly draining (Fig. 1B). She was taken to the operating room for laparoscopic cholecystectomy. Histopathology of the resected gallbladder demonstrated cholecystitis and plasmacytoma (Fig. 1C–F). Further laboratory and imaging studies confirmed the diagnosis of multiple myeloma.

### Case 2

A 52-year-old female with past medical history significant for triple negative high grade invasive ductal carcinoma of breast treated last year with mastectomy and chemotherapy with no residual disease; presented the emergency room with a 1-week history of right upper abdominal pain which radiates to the back. Pain was associated with nausea and vomiting and would come on about an hour after eating. Laboratory study results showed a total bilirubin level of 5.5 mg/dL, alkaline phosphatase of 340 U/L, aspartate aminotransferase and alanine aminotransferase levels of 305 and 442 U/L, respectively, and white blood counts of 5.4 K/ $\mu$ L. Computed tomography scan and magnetic resonance imaging of the abdomen demonstrated metastatic disease to the liver and bones, Gallbladder wall edema, and Periportal edema within the liver concerning for cholangitis (Fig. 2A, B). The patient was taken to the operating room for laparoscopic cholecystectomy and intraoperative cholangiogram. Histopathology of the resected gallbladder demonstrated metastatic poorly differentiated adenocarcinoma from the breast (Fig. 2C, D). The patient continued to deteriorate and she passed away in the next several days.

## Discussion

Extramedullary disease in plasma cell myeloma is uncommon and demonstrates decreased survival in affected patients [1]. Gallbladder involvement is extremely rare and less than 10 cases are reported to date [2]. The disease could be asymptomatic in some patients but could manifest as acute cholecystitis requiring surgical resection. Treating the underlying disease with chemotherapy or stem cell transplant is reasonable in patients with good functional status. In patients with gallbladder plasmacytoma without underlying plasma cell myeloma, cholecystectomy alone showed no evidence of recurrent disease [3].

Ductal carcinoma of the breast infrequently metastasizes to the gastrointestinal tract when compared to lobular type. Gallbladder metastasis from lobular carcinoma of the breast is extremely uncommon [4]. Patients could present with abdominal pain, cholangitis, cholestasis, or bile peritonitis [4]. Histopathologic examination could help making the diagnosis since abdominal imaging is rarely diagnostic. Treatment is palliative and should focus on symptoms alleviation since the prognosis is poor [5].

In one report, metastasis to the gallbladder accounted for 4.8% of all GB malignancies [6]. It showed poor prognosis in patients presenting with acute cholecystitis cholecystectomy and good prognosis in patients with gallbladder metastases undergoing curative resection [6]. Clinicians should maintain a high index of suspicion for gallbladder metastases in patients with metastatic disease presenting with biliary symptoms.

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## Statement of Ethics

The authors have no ethical conflicts to disclose. Informed consent was obtained from the patients for this case report.

## Disclosure Statement

We declare that there is no conflict of interests. The authors have no personal or financial disclosure.

## Author Contributions

Mohamad Mouchli: reviewed medical records and data and participated in the writing of the paper.

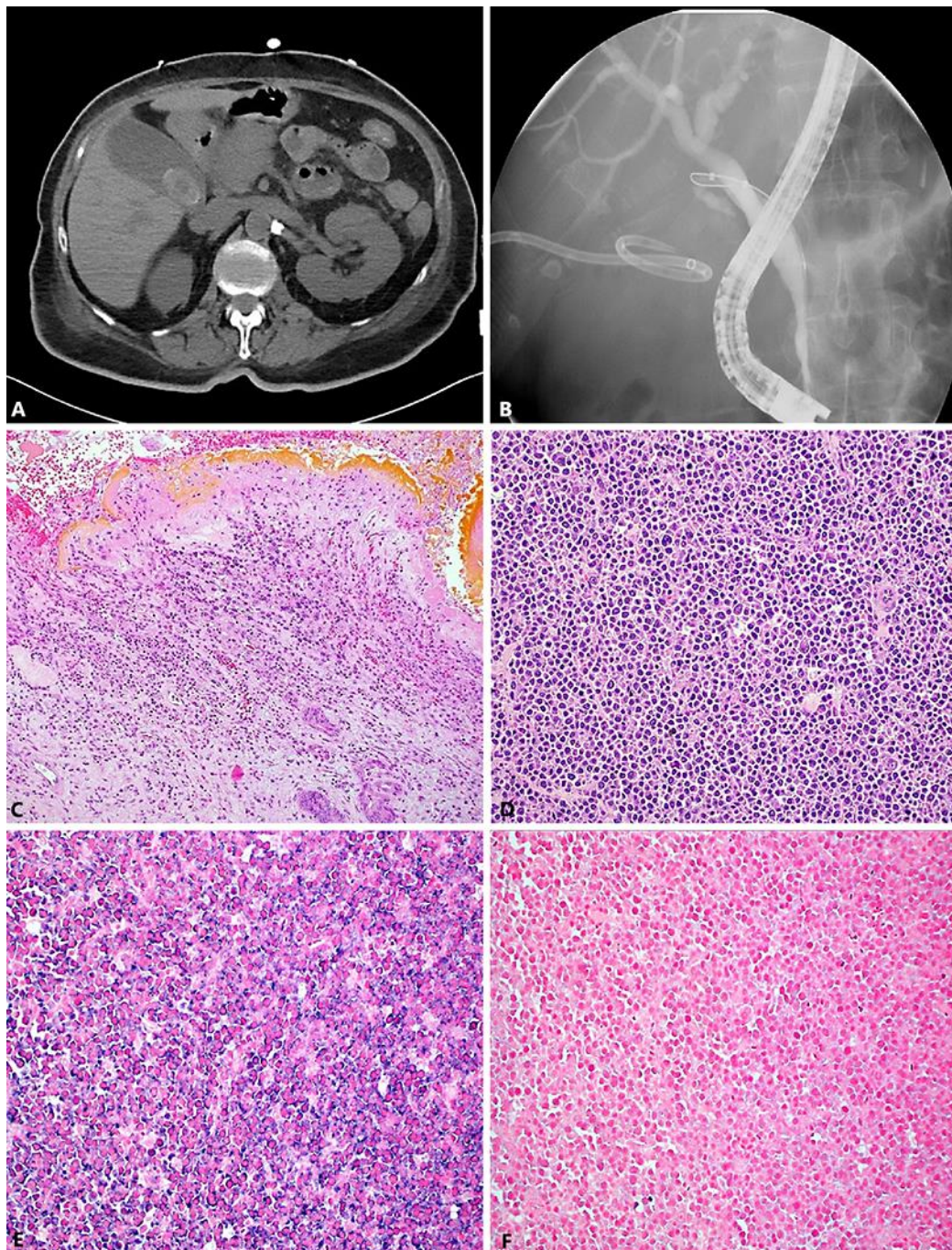
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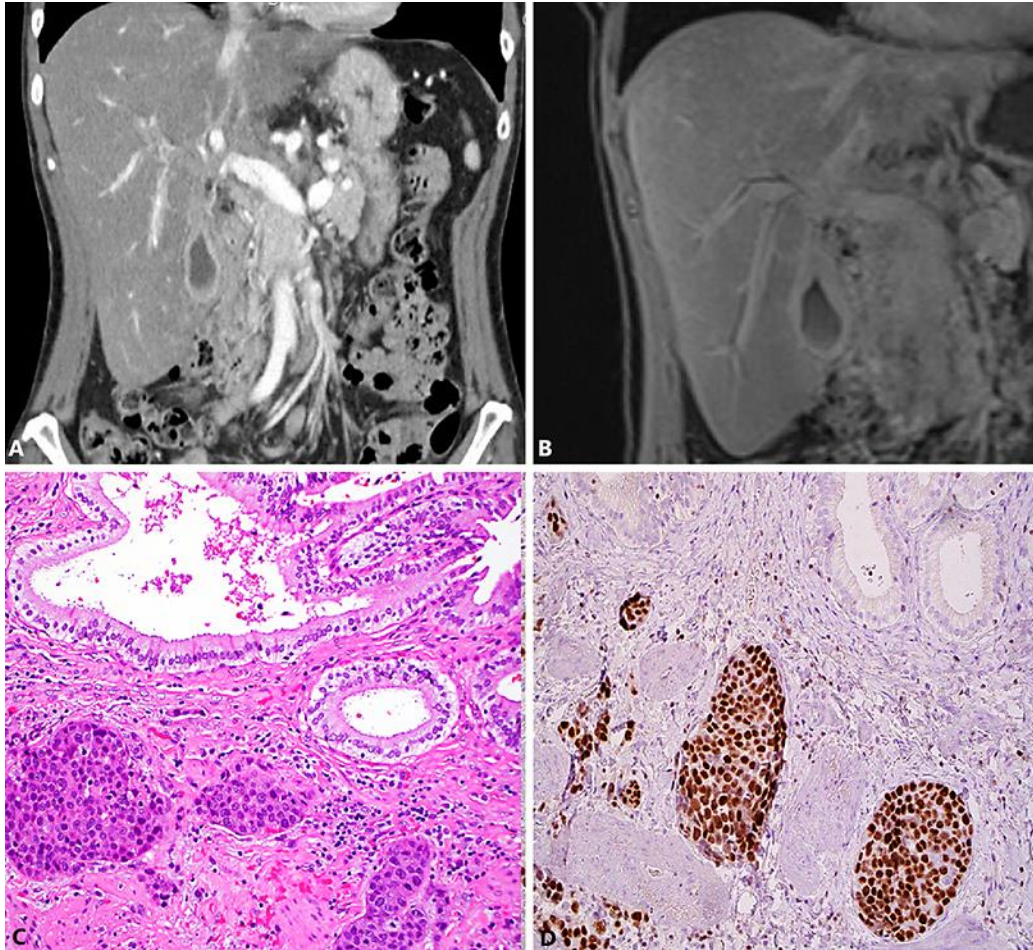
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**Fig. 1.** **A** The liver is enlarged measuring and is severely diffusely fatty infiltrated, demonstrating multiple rounded and wedge-shaped hypodense and hyperdense areas concerning for liver metastases. **B** Periportal edema within the liver and gallbladder wall edema with hepatic metastases. **C** H&E stained tissue section showing ulcerated gallbladder mucosa with biliverdin pigment at mucosal surface and a submucosal plasma cell infiltrate (100 magnification; 10×). **D** H&E closer view of the dense atypical plasma cell infiltrate in gallbladder wall (200 magnification; 20×). **E, F** Kappa light chain positivity (**E**) and Lambda light chain negativity (**F**) by in situ hybridization, confirming a monoclonal Kappa light chain plasma cell infiltrate: plasmacytoma/multiple myeloma (200 magnification; 20×).





**Fig. 2.** **A** Distention of the gallbladder with gallstones and mild thickening of the wall. **B** Cholangiogram during ERCP showing distal bile duct stricture requiring sphincterotomy, balloon sweep, and stent placement. **C** H&E stained tissue section showing metastatic high grade breast ductal adenocarcinoma in the submucosa of the gallbladder (200 magnification; 20×). **D** GATA3 immunohistochemically-stained tissue section positive in the metastatic adenocarcinoma, helping to confirm a breast primary (200 magnification; 20×).