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EC CLINICAL AND MEDICAL CASE REPORTS
Case Report

Rare Presentation of Gallbladder Adenocarcinoma as a Complication of Chronic Cholecystitis: A Case Report

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Received: July 16, 2021; **Published:** July 30, 2021

Abstract

Gallbladder adenocarcinoma is the most common gallbladder cancer reported around the world. We present a case of a 78-year-old male with a previous history of chronic cholecystitis that was then complicated with increased abdominal pain and a CT scan that reported a distended gallbladder with dependent intraluminal gallstones. He was treated surgically and subsequently was diagnosed with severe chronic cholecystitis. Months after treatment, he complained of increased pruritus and jaundice for which he was hospitalized with a diagnosis of bilioma and received multiple treatments for septic infections. The histopathology of the gallbladder reported well differentiated adenocarcinoma. The poor prognosis was unfortunately reflected in this patient's case due to the atypical presentation and advance stage of the disease at the time of the diagnosis. Hence, new imaging techniques and serological markers should be applied in patients with this condition in order to have better outcomes.

Keywords: *Gallbladder Adenocarcinoma; Gallbladder Cancer; Chronic Cholecystitis*

Introduction

The Gallbladder is the visceral organ destined for the storage of bile. It is used for the digestion and absorption of fats and nutrients in the intestine [1]. The most common diseases associated with the gallbladder are gallstones and gallbladder cancer. Gallbladder cancer represents less than 2 cases per 100,000 people worldwide but has a higher incidence in South American and Asian populations. In 2020 Gall Bladder Cancer ranked number 7 of the digestive system cancers in the United States. 80% of histopathology of gallbladder cancer is reported as adenocarcinoma as well as the currently reported case. The risk of gallbladder cancer increases with gallstones disease, advanced age, ethnicity, and female sex. The five-year survival rate of gallbladder carcinoma is below 5% [2,3].

Endoscopic ultrasonography, magnetic resonance cholangiopancreatogram and helical computed tomography; are the radiological studies used for the diagnosis of gallbladder cancer [4]. Serological tumor markers represent a good aid diagnosis and screen of disease recurrence following treatment. Gallbladder cancer has no specific good prognosis tumor markers, but CA 19-9 had predicted a more exact prognosis for the course of the disease [5].

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Case Presentation

We present the case of a 78-year-old male patient with history of Essential hypertension, GERD, ED, Simple Chronic Bronchitis, and Hyperlipidemia treated with Protonix, Trelegy, Viagra, Pravastatin, Amlodipine. He was seen for a regular outpatient f/u and complained of a right inguinal mass, his vital signs at that time were: BP 136/82, Pulse 73, O_2 Saturation 97%. A CT scan of the pelvis was ordered and done on: 5 days later with a report showing very small bilateral inguinal hernias. On the left, there was sigmoid-colon insinuating into the defect, and on the right, small bowel loops. Severe diverticulosis of the colon without diverticulitis was also noted. A large cystic lesion arising from the upper abdomen was also visualized suspected to be a distended gallbladder.

After this CT report, an abdominal ultrasound was ordered with the following report:

- Marked abdominal distension of the gallbladder with large amount of sludge and multiple gallstones. No definite pericholecystic fluid, abnormal gallbladder wall thickening or sonographic Murphy's sign to suggest acute cholecystitis. Consider a nuclear hepatobiliary scan with gallbladder ejection fraction to exclude acute or chronic cholecystitis.

Approximately one month after, the patient complained of right upper quadrant pain, his vital signs at that time were: BP: 138/80 mmHg, Pulse: 63 R: 18 Weight: 193 lbs, on physical examination the patient had moderate RUQ pain to deep palpation. He was already being studied for gallbladder changes on his CT scan and Ultrasound.

An MRI of the abdomen without contrast was performed as a recommendation from previous studies and showed:

- Extensive Cholelithiasis with markedly distended gallbladder. No biliary ductal dilation.

The patient was seen by the General Surgeon and scheduled for laparoscopic bilateral inguinal hernia repair, possible open. It was performed laparoscopic and was uneventful.

For his gallbladder issue, the patient decided to just monitor. A low-fat diet in the meantime was advised.

The patient was followed up by the surgeon after the bilateral inguinal hernia repair. Patient wanted to continue monitoring Gallbladder (Chronic Cholecystitis).

Patient was subsequently hospitalized due to abdominal pain and nauseas that started after eating spicy Chinese food the night prior. No vomiting, fever or chills. There was NO tenderness upon palpation of the right upper quadrant.

A CT scan of the abdomen and pelvis was done immediately and showed a:

- Massively distended gallbladder with dependent intraluminal gallstones.
- Circumferential wall thickening and overall mild pericholecystic inflammatory changes.
- Acute Cholecystitis due to cystic duct obstruction to exclude.
- Mid-to-distal small bowel obstruction with a clear transition zone localizing in the right hemiabdomen. Presumed to be a post-operative stricture.
- Diverticulosis of the distal two-thirds of the colon without Diverticulitis.
- Non-obstructing left nephrolithiasis with additional dependent intraluminal bladder calculi.

- Significant Prostatomegaly measuring up to 6.0cm.
- Normal appendix.

The patient was scheduled for surgery with a preoperative diagnosis of Cholecystitis and a postoperative diagnosis of severe chronic cholecystitis with a very large distended gallbladder and a drain placement. There was a minimal blood loss and no complications.

He was seen by his PCP to follow-up on his hospital chronic conditions and complained of generalized pruritus. He was referred back to the surgeon but refused at that time.

He continued complaining of increasing pruritus at a new office visit. His laboratory tests showed a CBC with WBC of 35.2 with 5% bands, 32% Neutrophils, 19% Lymphocytes and 35% Monocytes. His Total Bilirubin was 1.6, Alkaline Phosphatase 297, AST 75 and ALT 244. The patient was sent to the Emergency room on that same day.

Upon arrival to the ER, he mentioned he had been having pruritus, but also complained of becoming jaundice. A Gallbladder Ultrasound was done:

- Solid and fluid-appearing heterogeneous lesion at the gallbladder which represented either an Abscess or organizing Hematoma vs Seroma.
- CBC: WBC: 30.3 PLT: 123 Neutrophils: 22.3% Lymphocytes: 14.5% and Monocytes: 57.3%.
- Alkaline Phosphatase: 406.
- AST/ALT: 154/400.
- Total Bilirubin 10.6.

A CT scan of the abdomen and pelvis with IV contrast was indicated and the findings were consistent with:

- Biliary obstruction based on the new intrahepatic and extrahepatic biliary ductal dilation.
- In this patient with prior cholecystectomy, a cystic structure in the expected location of the gallbladder fossa either represents an abscess or biloma (9.3 x 7.9 x 8.6 cm).
- No evidence of drop stones.
- No bowel obstruction.
- Fatty polypoid structure in the gastric lumen which also needs elective workup to exclude a benign finding such as lipoma or malignant polyp.
- Splenic enlargement of uncertain etiology.

The patient was transferred to a different hospital that had all the requirements to meet the needs for this patient's condition. The diagnosis were:

1. Gallbladder fossa abscess vs Biloma status post IR drain placement.

2. Possible biliary obstruction.

3. Leukocytosis sepsis secondary to 1.

4. Severe sepsis without septic shock.

Patient was started on IV treatment with Levofloxacin, Fentanyl, and Midazolam with close monitory of vital signs and fluid administration. He also underwent Liver abscess drainage and the postoperative diagnostic impression was an uncomplicated drainage of Gallbladder fossa biloma.

An MRI of the Abdomen MRCP was performed:

- Proximal common bile duct is not delineated over an extent of approximately 2 cm; at that level is a slightly ill-defined heterogenous lesion which seemingly measures approximately 2.3 cm in AP extent and 2.4 cm in width; this lesion is of indeterminate etiology and correlation with surgical report is requested.

- Gallbladder: Reportedly status post cholecystectomy, with a well circumscribed appearing heterogenous lesion noted at the gallbladder bed measuring approximately 7.3 x 4.1 cm; MRCP demonstrating findings highly suggestive for connection to the biliary system, thus considered very likely consistent with biloma. Could perform HIDA scintigraphy to verify the diagnosis if of clinical significance.

Patient was seen by the Infectious disease specialist, who decided to switch IV Levofloxacin to Meropenem, perform blood cultures, IR-guided new drain placement, and monitor LFT, WBC, and Temperature curve.

The pathology result for the cholecystectomy showed moderately differentiated adenocarcinoma with infiltration of the layers. Margins had positive tumor cells.

Given these results, patient was transferred to another Hospital and his WBC at that time was 24.2 (down from 32.6 on the previous day), Monocytes at 61.5%, Neutrophils at 20.8% and Lymphocytes at 13.8%, blood cultures were negative. His Leukocytosis was fluctuating despite different antibiotic regimens. He was discharged on Ciprofloxacin and Metronidazole.

He was seen by the oncologist as an outpatient and Chemotherapy was discussed with the patient.

However, the patient presented to the hospital again with sepsis, leukemoid reaction, secondary intra-abdominal infection, and Cholangitis. A CT scan of the chest did not show PE, but had bilateral effusions with no infiltrates.

A CT scan of the abdomen showed fluid collection in the gallbladder fossa 3 x 5.4 cm, unchanged with previous CT. Some air in the collection system, most likely due to the drain. Hypodense lesions in the liver. Bile ducts and pancreatic ducts well positioned.

He had a leak around the drain for several days. When patient flushed the toilet, there was green thick pus mixed with bile in JP drain bag. A CA 19-9 increased from 790 to 1400 and Hepatic stents were placed.

Several weeks after, the patient had a malfunctioning biliary drain; he was seen by the surgical service. Seen by ID due to sepsis which was treated.

He had a laparoscopic cholecystectomy with a biliary drain and stent placement. Patient was successfully treated and discharged home. He received his first dose of Chemotherapy.

One month after the patient was seen in the Emergency Room, a CT scan of the abdomen:

- Interval placement of trans-abdominal gallbladder fossa drain, as well as stents within left and right main biliary ducts, terminating within duodenum.
- Concomitant aerobilia noted.
- Persistent markedly prominent periportal edema.
- Liver segment 8, increasing size of an indeterminate lesion, now measuring approximately 11.0 x 14.0 mm versus 9.0 x 12.0 mm on prior ct worsening splenomegaly.
- Interval development of small amount of ascites within all peritoneal quadrants.
- Prominent prostatomegaly with again, moderate-to-prominent filling volume of urinary bladder, suggesting at least some degree of outflow obstruction.

After many visits to the hospital, patient passed away from septic shock complications.

Discussion

The diagnosis of gallbladder cancer can be difficult at the beginning, as patients are often asymptomatic and the identification of the disease is reduced to unpredicted imaging studies and incidental findings in surgery [6]. As the diagnosis of GBC is difficult, multiple radiological studies can be performed as endoscopic ultrasonography, magnetic resonance cholangiopancreatogram, helical computed tomography, and FDG-PET scan. In this case presentation, CT scan didn't show images that suggested gallbladder cancer, and the diagnosis was not given until the histopathology report was obtained, making the management of the disease more difficult. Two phase CT scan improves the visualization of gallbladder wall thickening. Arterial and venous phases help differentiate malignant from chronic cholecystitis [4].

The multiple sepsis events in this case, makes the management more difficult as the mortality rate increases in patients with a current malignancy and sepsis [7].

CA 19-9 was the tumor marker used in this patient for the prognosis of his disease. New studies demonstrated that MUC6, CK17 and CD10 can be considered as prognosis markers that would be more specific for GBC. Being GBC a difficult disease to diagnose, these markers can also be used to help with the diagnosis and physicians could provide a rapid and more appropriate management to their patients [8].

Treatment for GBC initiates with cholecystectomy which is in theory curative. Laparoscopic techniques do not represent a risk of under diagnosis, the biggest problem here is that in the majority of cases, the diagnosis is made when the cancer is ineligible for surgery making GBC a disease with poor prognosis. Radiation and chemotherapy should be given to these patients [6].

Conclusion

Gallbladder cancer is enlisted in the group of deadly malignancies as it demonstrates a difficult rapid diagnosis leading to a poor prognosis. A detailed report should be made on the images of patients with chronic cholecystitis to rule out any malignancy at the current time. As we move forward in time and advance, studies demonstrate new techniques for diagnosis and management; new tumor markers and treatments should be applied so gallbladder cancer patients could have a better prognosis.

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Volume 4 Issue 8 August 2021