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CASE REPORT | BILIARY

Sarcoidosis of the Bile Duct

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ABSTRACT

Sarcoidosis is an inflammatory disease that affects multiple organs. The lungs are the most commonly involved organs. Although a large proportion of patients with sarcoidosis have liver involvement, bile duct involvement is rare. Here, we present a case of a 56-year-old African American patient presented with painless jaundice because of extrahepatic bile duct sarcoidosis. Our diagnostic approach using endoscopic cholangioscopy with targeted biopsies confirmed the diagnosis. Multiple bile duct stent exchanges were performed to manage the bile duct stricture in addition to medical therapy.

KEYWORDS: bile duct stricture; sarcoidosis; cholangioscopy

INTRODUCTION

Sarcoidosis is an inflammatory autoimmune disease that can affect multiple organs. Outside the thorax, around 50%–79% of patients with sarcoidosis have liver involvement proven by biopsy; however, the majority of these patients lack hepatic clinical manifestations.[1,2] Symptomatic patients usually present with abdominal pain, pruritus, and jaundice. Jaundice is a rare symptom and occurs because of intrahepatic or extrahepatic cholestasis.[1] Enlargement of the lymph nodes in the porta hepatis results in compression of the bile duct leading to jaundice and elevation in liver enzymes.[3,4] We report a case of sarcoidosis involving the extrahepatic bile duct.

CASE REPORT

A 56-year-old African American woman with a medical history of hypertension presented to the emergency department with a 2-day history of nausea and progressive painless jaundice. Vital signs were within normal limits. Physical examination revealed icteric sclera and normal abdominal examination. Laboratory showed a total bilirubin of 8.4 mg/dL (normal: 0.2–1.3 mg dL), conjugated bilirubin 7.5 mg/dL (normal: 0–0.3 mg dL), alkaline phosphatase 606 IU/L (normal: 30–125 IU/L), aspartate aminotransferase 107 IU/L (normal: 3–44 IU/L), and alanine aminotransferase 189 IU/L (normal: 0–40 IU/L). There were no signs or symptoms suggestive of acute cholangitis. The abdominal/pelvic computed tomography with intravenous contrast showed moderate central intrahepatic biliary ductal dilatation with compression of the bile duct confluence/upper common bile duct secondary to conglomerate lymph nodes at the porta hepatis. Enlarged retroperitoneal and para-aortic lymph nodes were noted. Scattered calcified lesions were demonstrated in the liver and spleen. Cancer antigen 19-9 and alpha-fetoprotein were normal. Endoscopic ultrasound (EUS) revealed intrahepatic biliary duct dilation and multiple enlarged lymph nodes in the porta hepatis region with the largest measured 28 × 26 mm in diameter (Figure 1). Fine needle aspiration and biopsy were performed. Five passes were made with the 22-gauge SharkCore needle (Medtronic, Minneapolis, MN) using a transduodenal approach. Pathology results showed fibroconnective tissue with few reactive multinucleated giant cells and stromal cells without evidence of malignancy. Endoscopic retrograde cholangiopancreatography (ERCP) was performed and revealed a single severe stricture involving the common hepatic duct 20 mm in length (Figure 2). One 10 Fr by 12 cm plastic biliary stent was placed into the common bile duct. Total bilirubin trended down to 1.1 mg/dL, and alkaline phosphatase, aspartate aminotransferase, and alanine aminotransferase were normalized within 4 weeks.

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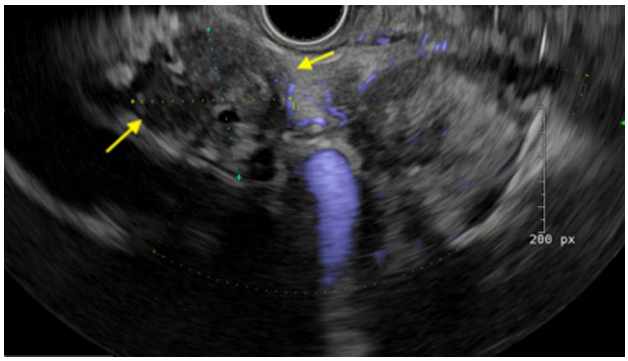

Figure 1. Endoscopic ultrasound showing an enlarged lymph node (arrows).

A repeat EUS performed within 6 weeks showed multiple enlarged lymph nodes in the porta hepatis region that were biopsied through fine needle biopsy ERCP showed proximal bile duct stricture with upstream dilation that was dilated with a balloon. Brushings and guidewire-guided biopsies were obtained from the bile duct, and the plastic stent was exchanged. Biopsies from lymph nodes showed sarcoid-like granulomas without malignancy, while biopsies from the bile duct showed benign ulceration, granulation tissue, and inflammatory reactive epithelial cells. The patient was evaluated by a pulmonologist as outpatient and started on prednisone 30 mg daily for sarcoidosis once her liver enzymes were normalized.

After adequate medical therapy, a repeat ERCP still showed a persistent single stricture in the bile duct despite improvement in lymphadenopathy. A single-operator cholangioscopy was

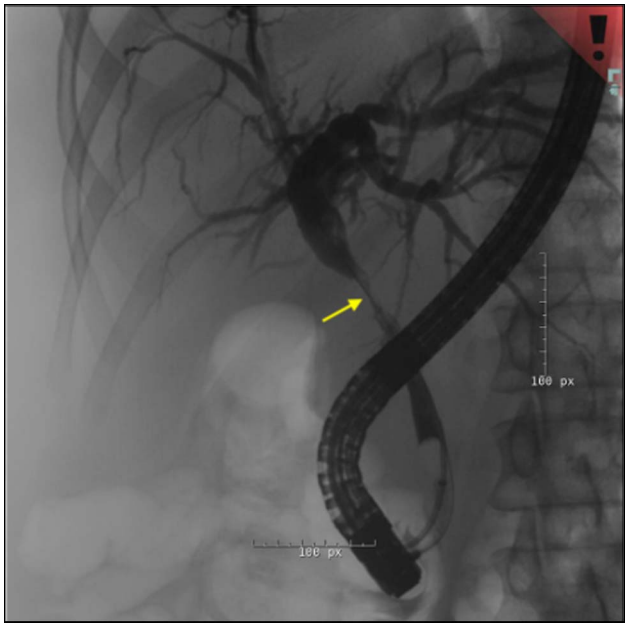

Figure 2. Endoscopic retrograde cholangiopancreatography showing a single severe stricture involving the common hepatic duct (arrow).

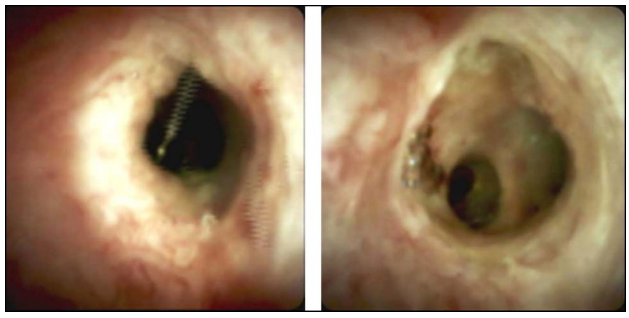

Figure 3. Cholangioscopy showing abnormal mucosa characterized by irregularity and nodularity without significant neovascularization.

then performed, and abnormal mucosa characterized by irregularity and nodularity without significant neovascularization was found in the region of the common hepatic duct (Figure 3). Cholangioscopy-directed biopsies were obtained, and the pathology results showed reactive ductal epithelial cells with chronic inflammation and noncaseating granulomas (Figure 4).

Over a period of 20 months, the patient underwent 6 additional EUS/ERCP procedures with multiple biliary stent exchanges to treat the bile duct stenosis with serial stenting. She was maintained on prednisone, methotrexate, and hydroxychloroquine without significant side effects except for weight gain because her body mass index increased from 33 to 40 kg/m^2. Despite conservative management, the bile duct stenosis persisted, which raises the concern for fibrosis in the bile duct. A multidisciplinary team of interventional gastroenterology, pulmonary, and surgery discussed the need for a surgical intervention with plans for hepaticojejunostomy in the near future.

DISCUSSION

Sarcoidosis most commonly affects the lung, which is involved in 90% of patients. Although extrathoracic sarcoidosis is less common than pulmonary sarcoidosis, some patients may present initially with extrathoracic manifestations.[5,6] Although the hepatic involvement of sarcoidosis is common, most of the patients do not have hepatic symptoms. Sarcoidosis of the bile ducts occurs in the intrahepatic and extrahepatic ducts because of different mechanisms. Patients rarely present with painless jaundice as a symptom of sarcoidosis, and only a few case reports confirmed the diagnosis of extrahepatic duct sarcoidosis through surgical resection.[3,7–9] In our case, the patient did not have any history of sarcoidosis or any thoracic findings suggestive of the disease. Initial presentation was concerning for malignant pancreatic or biliary obstruction from large porta hepatis nodes. In addition, the differential diagnosis included lymphoma, infections, HIV cholangiopathy, sarcoidosis, and metastatic malignancy. Performing EUS/ERCP was the main next step to evaluate for the etiology and obtain a tissue sample. Although the initial biopsies showed nonspecific findings, a repeat EUS/ERCP was warranted to rule out malignancy. Once

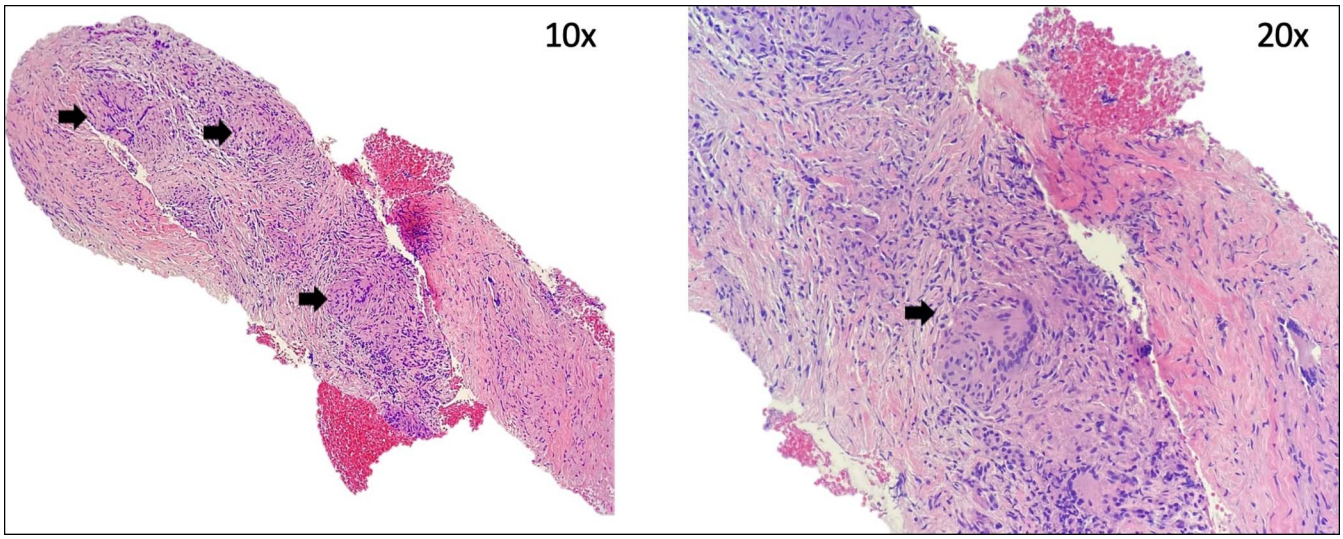

Figure 4. Pathology slide showing reactive ductal epithelial cells with chronic inflammation and noncaseating granulomas (black arrows).

sarcoidosis was confirmed, the patient was started on treatment. However, the nonresolution of biliary stricture, despite treatment of sarcoidosis and resolution of lymphadenopathy, led us to perform cholangioscopy to evaluate the bile duct and rule out malignancy. Cholangioscopy-directed biopsies were useful in diagnosing the involvement of the bile duct with sarcoidosis.

Jaundice occurs in patients with sarcoidosis of the bile duct because of either compression of the bile duct by enlarged lymph nodes or bile duct involvement of sarcoidosis.[1] Enlarged lymph nodes in the porta hepatis region due to sarcoidosis usually cause direct compression of the bile duct, which may resolve with medical treatment of sarcoidosis.[1,10] The lack of response to medical treatment with steroids should raise the concern for bile duct involvement of sarcoidosis which requires serial biliary stenting, and in some cases, patients may require surgical resection. In our case, the enlarged lymph nodes responded to treatment with steroids after establishing the diagnosis of sarcoidosis; however, the patient continued to have bile duct strictures and required serial bile duct stenting.

Treating patients with biliary obstruction due to porta hepatis adenopathy secondary to sarcoidosis with glucocorticosteroids may cause total resolution of their hyperbilirubinemia.[10] Our patient was treated with prednisone initially, and the lymph nodes responded to medical therapy. However, the biliary stricture did not respond to medical therapy, which raised the concern of fibrotic changes in the bile duct because of chronic sarcoidosis involvement. In patients with biliary strictures that do not respond to serial biliary stenting, biliary diversion surgery/biliary-enteric anastomosis such as hepaticojejunostomy should be considered. Studies have shown good long-term outcomes after hepaticojejunostomy in iatrogenic cases.[11,12]

In conclusion, bile duct involvement of sarcoidosis is a rare condition with only a few case reports in the literature. Endoscopic cholangioscopy with targeted biopsies of the bile duct is a useful tool to diagnose sarcoidosis of the bile ducts.

DISCLOSURES

Author contributions: M. Alsayid: literature review, case review, manuscript writing and review, and is the article guarantor. A. Taftaf: literature review, case review, manuscript writing and review. KM Harmouch: literature review, case review, manuscript writing and review. A. Alabkaa: case review, manuscript drafting and review. SG Pappas: case review. A. Singh: manuscript drafting and review.

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