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Granulomatous Cholecystitis in a Patient with Schistosoma Mansoni Infection: A Case Report

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Abstract **Case Report**

***Case summary*:** A 20-year-old man presented with three-month history of dull ache RT hypochondrial pain, nausea, vomiting and dyspeptic symptoms. Abdominal ultrasound showed multiple gallbladder polyps which was treated with open cholecystectomy. Histopathology results showedschistosomal granulomatous cholecystitis. The patient had an uneventful postoperative course and was treated with oral praziquantel and follow up of 6 month interval he remain asymptomatic. Review of different aspect of gallbladder schistosomasis are discussed.

Keywords: hypochondrial pain, symptoms, Histopathology, patient.

INTRODUCTION

Schistosomiasis is a parasitic disease caused by a trematode helminth of the schistosoma genus, acquired by contact with contaminated water [1]. Currently, schistosomiasis remains a major public health problem which affects approximately 200 million people worldwide. As acquisition of the infection is linked with poor socioeconomic and sanitary conditions, in developing countries, particularly in sub-Saharan Africa. There are five main species of schistosoma accounting for human infestation: Schistosomamansoni(S. mansoni), Schistosomahaematobium(S. haematobium), Schistosomajaponicum (S. japonicum), Schistosomaintercalatum (S. intercalatum) and Schistosomamekongi(S. mekongi) [2]. Gastrointestinal manifestations, mainly caused by deposition of S. mansoni eggs in the gut wall, are the most common. Indeed, 1–2% of appendectomy specimens have been reported to contain schistosomes in endemic areas [3]. Hepatosplenic schistosomiasis is the most severe form, representing a common cause of non-cirrhotic portal hypertension, associated with a significant mortality [4]. A rare case of acute cholecystitis associated with multiple epitheloidgranuloma and deposition of schistosoma ova on the gallbladder wall. They were no hepatosplenic or urinary manifestation.

CASE PRESENTATION

A 20-year-old male presented with a three-month history of dull abdominal pain originating in the right upper quadrant together with repeated episodes of nausea and vomiting, lasting the past three months. The patient's physical exam on admission revealed tenderness in the right upper quadrant with a negative Murphy's sign and without a palpable mass. Laboratory tests showed a normal white blood cells count, hemoglobin, platelets count anda normal liver profile. Abdominal ultrasound showed gall bladder anterior wall two focal thickening, the largest in the gall bladder neck measuring (1.4 x 1.2 cm) and the other one measuring (2.6 x 0.7 cm), the posterior wall showed tiny small polyp measuring (0.7 x 0.4 cm) all polyps showed no increase in vascularity and no gall bladder stones, also there is multiple mesenteric Lymph nodes, normal liver, billiary system and CBD, normal pancreas, no focal lesion (Figure 1). The imaging finding of gallbladder's wall thickening was suggestive of acute inflammation (>4 mm according to the last Tokyo Guidelines 2013 concerning the Management of acute cholecystitis) [5]. But, since there were no clinical-laboratory signs of acute exacerbation of the disease (neither fever nor leukocytosis) and there was evident of GB polyps so, it was decided to Proceed to open cholecystectomy (Figure 1).

Intra- operatively the gallbladder's wall appeared mildly inflamed and thick with necrotic spots and gray colour at fundus part of the GB (Figure 2). Identification of calot's triangle done easily and critical view of safety insured. A retrograde approach was and ligation of the cystic duct and artery and finally the gallbladder was safely excised. After draining the content, we found a polyp on the posterior wall of the GB.

Histopathological showed (macroscopic: GB measuring (6 * 4 cm) no stones with thick wall), Histology (showed multiple epitheloid granulomas, schistosoma ova are noted in the wall), interpretation: Schistosomal granulomatous cholycystitis (Figures 3).

Postoperatively, the patient's abdominal pain improved, and the laboratory tests normalized. He received praziquantel 20 mg/kg orally every 4 hours for 3 doses. After 6 months of follow-up the patient remains asymptomatic.

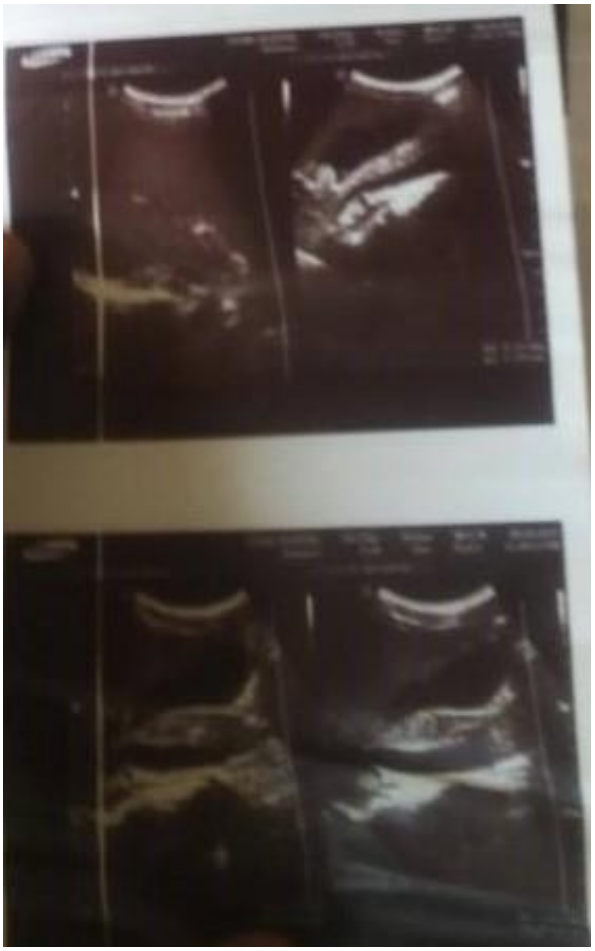

Figure 1: Ultrasound showing a multiple GB polyps and multiple mesenteric LNs

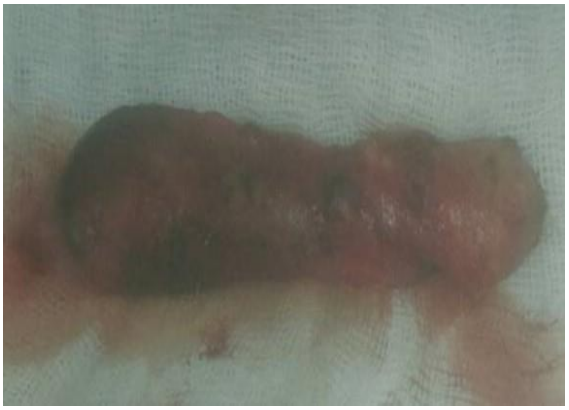

Figure 2: Gallbladder's wall extremely inflamed and thick with extensive fibrotic granulomatous reaction, as shown on laparotomy

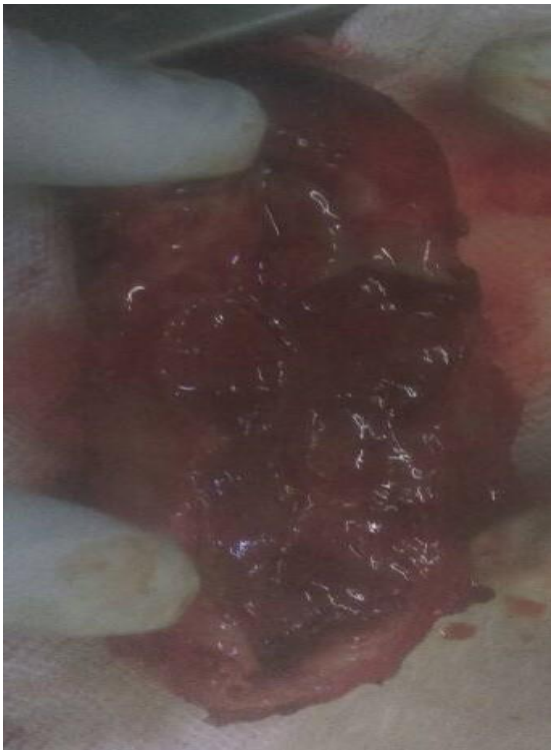

Figure 3: Show GB lumen with area of fibrosis and thicken

DISCUSSION

Schistosomiasis, also known as bilharzia, remains currently one of the major tropical and sub-tropical diseases caused by infection of the Schistosoma parasite. This parasite is most commonly found throughout Africa, but also inhabits parts of South America, Caribbean, Middle East and Asia [6]. These blood flukes start as infective larvae that grow in an intermediate host, commonly freshwater snails, with infections sites commonly found at ponds, lakes, rivers, reservoirs and canals. They later enter the human host via the skin and later migrate to common sites including the lungs and liver. Once in the body, the larvae develop into adult schistosomes where the females later release their eggs [7]. It is these eggs that when trapped in body tissues, cause immune reactions leading to

progressive damage to organs. The symptoms of schistosomiasis are generally not caused by the worms themselves but by the body's reaction to the parasites' eggs. The eggs induce the host to form a granulomatous immune response with lymphocytes, eosinophils, and activated macrophages [8].

Many infections are asymptomatic and may not cause effect for several months to even years. Symptoms vary depending on the site of infection with common sites being the urinary tract, liver, spleen and gastrointestinal tract. When affecting the urinary tract common symptoms include dysuria, proteinuria, and hematuria. Intestinal schistosomiasis common symptoms include chronic or intermittent abdominal pain and diarrhea with or without blood [9]. The symptoms of hepatosplenic schistosomiasis generally are secondary to the resultant portal fibrosis with resulting complications of portal hypertension, splenomegaly, hypertensive gastropathy, esophageal varices, and upper gastrointestinal bleeding [10].

Involvement of the gallbladder is far less common with the pathogenesis not fully understood. One theory is that the resultant fibrosis of the cystic duct, similar to how the ureters react, may lead to stenosis and bile stasis, resulting in gallstone formation [11]. Others have hypothesized that granulomatous inflammation in the gallbladder's wall makes it prone for stone formation [12]. The majority of reported cases have described patients with concurrent gallstones [13]. This has led to question the true cause of the cholecystitis. Our report highlights a rare case of schistosomalcholecystitis without cholelithiasis. Our patient presented with chronic, nonspecific symptoms atypical for acute cholecystitis. The method of diagnosis for schistosoma is generally by microscopic examination of excreted remains, either in urine or stool. There are no specific laboratory or radiological investigations to diagnose gall bladder schistosoma involvement. Reported ultrasound findings include wall thickening, fibrosis, wall calcification, gallstones and reduced fasting volume [14]. The finding of a gallbladder polyp with schistosoma infection is exceedingly rare, with only two prior cases being reported [15, 16].

General medical treatment for schistosoma infection includes theanthelminthic drug praziquantel which iseffective against all Schistosoma species. It is given orally with treatment is best initiated at least four to six weeks post-exposure. Its effect is only against the adult parasite which prevents further release of eggs [6]. The most common reported treatment for gallbladder schistosoma infection involves surgical excision by cholecystectomy. The timing of surgery can be delayed if there are associated complications such as obstructive jaundice, cholangitis, or liver abscess. Similar to others, our patient received postoperative praziquanteland remained asymptomatic after treatment [17].

CONCLUSION

Schistosomiasis cholecystitis is a rare clinical entity and even more so with associated gallbladder polypsand without gallstones. Obtaining relevant past medical history in terms of travel and occupational history is key to steering the diagnosis due to the lack of sensitive tests. With the presentation of nonspecific, chronic symptoms and possibility of Schistosomiasis exposure, clinician should have a low index of suspicion for bilharzia infection. While majority of cholecystitis in patients with schistosomiasis involve the presence of gallstones, we have highlighted a case that presented with polyps. Schistosomiasis cholecystitis can be safely managed with traditional cholecystectomy and post-operative oral praziquantel.

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