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Case Report

Chronic hepatointestinal schistosomiasis: a case report and review of literature

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ABSTRACT

Schistosomiasis is a chronic enteropathogenic disease assignable to blood flukes of the genus *Schistosoma*. The illness afflicts roughly 240 million human beings globally. The chronic state attributed to the infection arise because of granuloma creation either in the intestine, liver or the bladder. This is a case report based on a patient who presented with an acute abdomen in need of an emergency surgery. The diagnosis could only be made after the Pathology report on the surgical specimen. This is a case report of a 53-year-old-female with no past medical history, presented to the emergency department with an abdominal pain, hematochezia, diarrhea and weight loss. The blood work revealed elevation of inflammatory parameters and the computed tomography (CT) scan suggested a complicated acute appendicitis versus a complicated either cecum or a redundant sigmoid colon neoplasm. The patient underwent an exploratory laparotomy followed by a right colectomy with primary anastomosis, right salpingectomy and a sigmoidectomy with a terminal colostomy. It is essential to emphasize the significance of early identification, diagnosis and treatment of schistosome illness to impede or defer the succession to advanced stage, although occasionally can be an obscure malady, with a delayed arrival of diagnostic features, whomever the diagnosis is incredibly difficult on imaging, being most of the times made by a pathologist, as so, it can mimic several other surgical problems.

Keywords: Blood-dwelling, Intestinal occlusion, Tropical disease, Granulomas, Schistosome

INTRODUCTION

Schistosomiasis is a chronic enteropathogenic morbid condition caused by blood flukes (trematode worms) of the Schistosoma species. These parasites are found in freshwater snails and sickness can materialize with even a unique vulnerability to contaminated water.[1] It impacts just about 240 million people and is considered the third most calamitous tropical malady in Africa, South America, the Caribbean, the Middle East, and Asia. A total of five species have been found to cause sickness in human species; *Schistosoma mansoni, Schistosoma japonicum* and *Schistosoma haematobium* are believed to be the three most prevalent.[2] The lifecycles of the five schistosome species are analogous and require, as said formerly, a snail intermediate host. Pending on the phase of the schistosome infection, an ample scope of clinical symptoms may appear, and several of them are rough to discern from those of multiple other disorders, such as, fever, headache, myalgia, anorexia, prostration, bloody diarrhoea, hepatosplenomegaly, eosinophilia, and elevated IgE levels. A light or transitory rash may progress through hours until a week following the assault, resulting in itchiness. Despite that, it generally goes unobserved and ensues most recurrently in travellers who are susceptible for the initial time.[3] Occasionally, a febrile disorder arises nearby 3–6 weeks following exposure. Such acute stage syndrome is frequently referenced to as Katayama fever, named after the initial setting (Katayama community, Hiroshima, Japan) whereby was a distinguished trait of the contamination. Katayama fever is noticed habitually in human beings who have had no preceding exposure to schistosomes.[4] The individuals that progress to the chronic condition, are then referred to have intestinal

schistosomiasis. The clinical appearances are the effect of host immune reaction to schistosome eggs, most typically implanted in the blood vessels of the liver and intestine and consequently potential to provoke diarrhoea intercalated with obstipation, and haematochezia. Although, asymptomatic patients are responsible for a great amount of attributed percentage.[5] Microscopic inspections typically displays several neutrophils and eosinophil sediments, in addition to granulomatous inflammatory reactions (Figure 1). Some patients may exhibit manifestations compatible with an acute appendicitis because of noncalcified eggs lodged in the appendix. Chronic infection expresses a disarray of the intestinal wall vascular network, smooth or distinguished mucous membrane yellow nodules, colonic polyps, and intestinal lumen narrowing. The yellow nodules are principally the demonstration of calcified worm egg deposition, fibrous tissue thickening and atrophy of the mucosa (Figure 2).[6]

CASE REPORT

This is a case report based on a patient who presented with an acute abdomen in need of an emergency surgery. The diagnosis could only be made after the Pathology report on the surgical specimen. It aims to show a particular diagnosis that is not very common or either in the head of the emergency physician as a differential diagnosis.

A 53-year-old female, Born in São Tomé and Príncipe, resident in Portugal since June 2024, with no past medical history. The patient went to the emergency department with a history of more than 5 years of abdominal pain, haematochezia, diarrhoea, weight loss (approximately 20 kg), nausea and vomiting. The blood work revealed an haemoglobin level of 8.1 g/dl, a C-reactive protein of 16 mg/dl and a leucocytosis of 15,999 leucocytes). The abdomin-pelvic computed tomography (CT) scan suggested as a differential diagnosis a redundant sigmoid colon with an imagine of a possible malignancy complicated with an abscess formation that extended to the right side (due to redundant colon) or a complicated acute appendicitis (Figure 3).

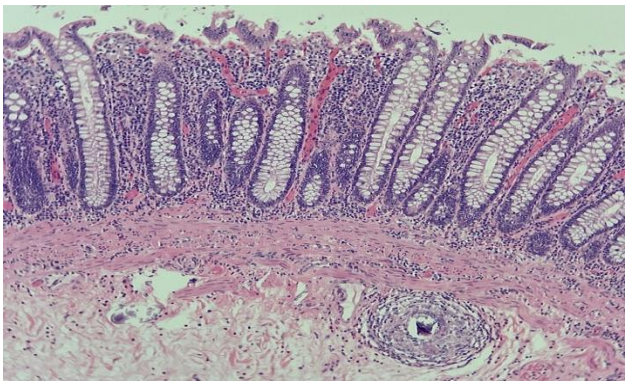

Figure 1: Colonic submucosa with dense connective tissue fibrosis, involving two calcified Schistosoma eggs, adjacent to a lymphoid aggregate. Microscopic picture of this case report specimen.

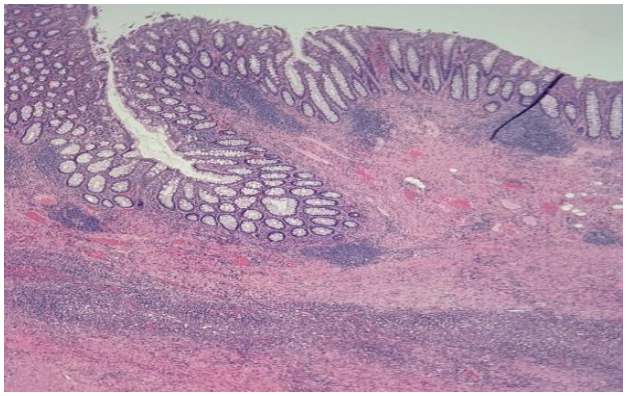

Figure 2: Colic mucosa of polypoid configuration, with permeation of the stroma by inflammatory infiltrate with a lymphoplasmacytic predominance, accompanied by numerous eosinophils and neutrophils, affecting the muscularis mucosa and with the formation of prominent lymphoid aggregates in a 'Crohn-like' depth. In the submucosa there is vascular congestion, fibrosis, and towel-like permeation by numerous histiocytes accompanied by a mixed-type inflammatory infiltrate. Microscopic picture of this case report specimen.

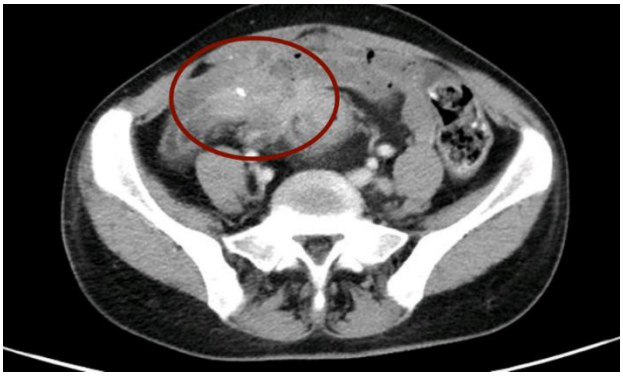

Figure 3: Red circle enclosing the extensive inflammatory changes centred on the FID, with loss of definition of the last ileal loops and the cecum, findings suggestive of a complicated acute appendicitis, probably due to perforation and pelvic abscess or as a differential diagnosis a redundant sigmoid colon with an image of a possible malignancy complicated with an abscess formation extended to the right side.

Due to the painful abdomen palpation, the elevation of the inflammatory parameters and the findings on the CT scan, the patient underwent an exploratory laparotomy. Intra-operatively it was found an enormous inflammatory mass with an abscess evolving the cecum, appendix, right fallopian tube and the sigmoid colon, was provoking an intestinal occlusion with a consequent perforation, and because we didn't know the exact origin of the perforation or if it was a neoplasm, the decision was to perform a right colectomy with primary anastomosis, right salpingectomy and a sigmoidectomy with a terminal colostomy. The

postoperative period was uneventful. The patient completed a 14-day course of antibiotic therapy with ciprofloxacin plus metronidazole and was discharged 20 after surgery. The pathological anatomy report of the surgical specimen revealed: A chronic intestinal schistosomiasis, with the typical granulomatous formation, found in the appendix cecum and sigmoid colon; an inflammation of the fallopian tube and a low grade appendiceal mucinous neoplasm (LAMN).

Figure 4: Right hemicolectomy, which included a 28.5 cm colon and a 29 cm long terminal ileum segment, observing several areas of adhesion between loops. The serosa has a violet appearance, with fibrinopurulent inducts. The colonic and ileal walls are irregular and deformed. The mucous membranes are oedematous, have a congested and nippled appearance. The ileo-caecal appendix is 4cm long, whose lumen is dilated and partially filled with mucinous liquid and pus, with fistulisation of the wall causing adherence of the tip of the organ to the colon segment. Colic and epiploic fat has areas of increased consistency, a congested appearance, identifying an abscessed area measuring 2.8 cm. Macroscopic picture if this case report specimen.

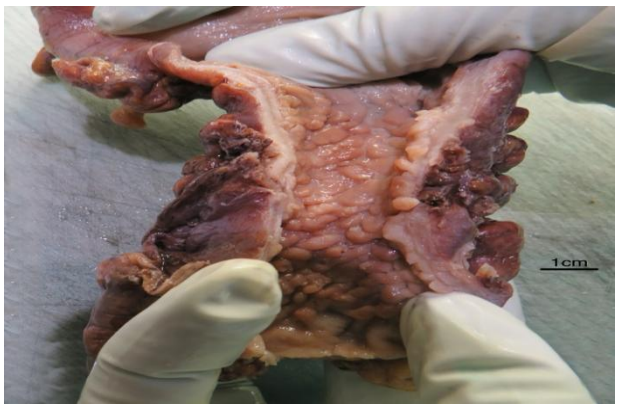

Figure 5: Sigmoidectomy at 16.5 cm; whose serosa has a violet appearance; the wall is irregular and deformed. The mucosa has lost its usual folding and areas with a 'cobblestone'-shaped appearance. Macroscopic picture of this case report specimen.

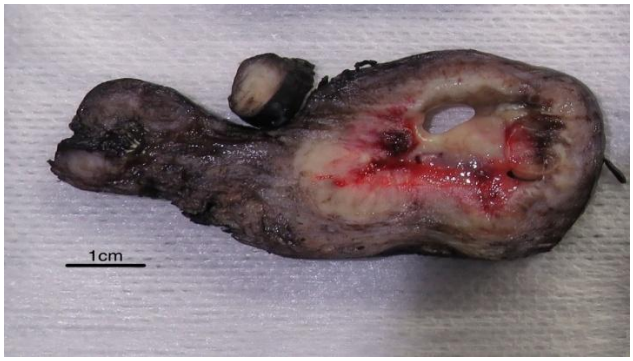

Figure 6: Piosalpinx: fallopian tube with a congested appearance, identified as a 3.5 cm open section, with obliteration of the entire mucosa. Macroscopic picture of this case report specimen.

DISCUSSION

Intestinal schistosomiasis is commonly detected by colonoscopy. Ordinarily, intestinal mucosal features following a colonoscopy, pathological outcomes of mucosal biopsy or microscopic investigation are the chief techniques to recognize the disease. Traditional abdominal CT scan has a confined diagnostic performance in schistosomiasis.[6] Praziquantel has been conventionally the drug of choice in the management of all types of schistosomiasis infection, being surgical treatment reserved for the patients presented with acute intestinal entanglements like perforation, bleeding polyps or obstruction.[7,8] There are several cases of schistosomiasis imitating colon cancer described in the literature[9] hence the dilemma during the differential diagnosis since the disclosure of the case was not in our hypothesis of diagnosis. Foregoing studies have indicated that schistosomiasis can include every segment of the intestinal tract, yet the rectum, sigmoid colon and descending colon supplied by the inferior mesenteric vein were more widespread, comprising for 90% cases.[10] Following a Schistosoma infection countless eggs are sedimented in the loose connective tissue within the submucosa of the intestinal wall. This creates inflammation and foreign body response, with the consequent formation of deposits made of granulomas that consequently stimulate a multiplication of the fibrous tissue and a swelling of the mucosal muscle stratum, all of which ultimately culminates in nodular variations and vascular network disarray perceptible to the human eye on a colonoscopy.[11] Patients with progressed schistosomiasis continued to face a 20-year reduced longevity in comparison with overall population, nevertheless a great deal of infected humans can reach the age of 80 concluding that the advanced state of schistosomiasis may be more indolent than what some may think.[12] The enforcement of medical aid contributed to the reduction of morbidity and mortality due to complications associated to a progressive schistosomiasis specially in the elderly population, enhanced overall health care.[13] This is particularly relevant since many of these patients suffer from heavy impairment and encounter a deteriorated quality of life on account of an impaired liver function.[14]

A small number of studies endeavoured to estimate overall health condition of chronic schistosomiasis patients from the viewpoint of physical status united with work capability and psychological well-being, however, none was successful at demonstrating the amount of time that these patients might live a healthy life.[15] It is essential to emphasize the significance of early identification, diagnosis and treatment of schistosome illness to impede or defer the succession to advanced stage, in spite of the fact that occasionally can be an obscure malady, with a delayed arrival of diagnostic features, whomever the diagnosis is incredibly difficult on imaging, demanding a colonoscopy or a surgical procedure in order to obtain specimen for microscopic examination, for the final diagnosis.[16]

CONCLUSION

Schistosomiasis is a chronic enteropathogenic disease caused by blood flukes of the genus Schistosoma. It is a diagnosis that requires a high level of suspicion, since the exact diagnosis can only be made by colonoscopy of microscopical analyses of the surgical specimen. Surgery is reserved for the cases when acute intestinal complications appear, such as, polyps haemorrhage, obstruction or perforation. Regardless of the need for surgery, the pharmacological management of schistosomiasis infection, includes the use of praziquantel, fact that has been demonstrated to be effective against all schistosome species. This case report aims to discuss the importance of early detection, diagnosis, and treatment of schistosome infection to prevent or delay the progression to advanced stage, although it sometimes can be an occult illness, with late onset clinical symptoms, whom the diagnosis is very challenging. For instance, in this case the patient was operated because it was suspected of a perforation either from a complicated appendicitis or a malignancy of the redundant sigmoid colon located on the right side, what constitutes a surgical emergency. Nevertheless, because of the intraoperative findings, it was necessary to perform a multiple organ resection, leading to an increased postoperative morbidity.

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