

## Sigmoid Volvulus as the Initial Presentation of Chronic Intestinal Schistosomiasis Case Report and Literature Review

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Received: 02 May 2022

Accepted: 16 May 2022

Published: 20 May 2022

J Short Name: AJSCCR

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### Citation:

A Althumali, Sigmoid Volvulus as the Initial Presentation of Chronic Intestinal Schistosomiasis Case Report and Literature Review. *Ame J Surg Clin Case Rep.* 2022; 4(15): 1-3

### Keywords:

Volvulus; Mansoni; Schistosomiasis

### 1. Abstract

We report a chronic Intestinal Schistosomiasis which is presented as a Sigmoid Volvulus in a healthy 21-year-old Sudanese male who presented with abdominal pain. Sigmoid Volvulus was diagnosed, and he underwent exploratory laparotomy. Pathological study by microscope revealed a non-necrotizing granulomas with centrally located egg with a lateral spine characteristic of *S. mansoni*. To our knowledge, this is the fifth reported case worldwide.

### 2. Introduction

Human schistosomiasis is an acute and chronic parasitic disease caused by infection with blood flukes trematode worms of the genus *Schistosoma* [1]. Schistosomiasis is a public health problem in tropical and subtropical regions of Africa, Asia, the Caribbean and South America [1]. Acquired Schistosomes are transmitted when people and/or infected animal host species contacted with contaminated water [1]. Six species of *Schistosoma* are responsible for the two major forms of the disease intestinal and urogenital schistosomiasis. Rarely reported complications in patients with intestinal schistosomiasis include Intestinal polyps [2], dysplasia, appendicitis [3], intussusception [4], and mass lesions or intestinal obstruction due to stricture [5-7].

### 3. Case Presentation

A healthy 21- Year- old Sudanese male patient presented to the emergency room with two days history of diffuse cramping ab-

dominal pain, aggravated by food associated with bloating and constipation in the last day. There was no nausea or vomiting. There was no constitutional symptoms. The patient had no chronic conditions and didn't take any medications. He did not have any past surgical history. He had a history of recent travel to Sudan as a social visit along with other visits before as well. Upon examination, Temperature was 37.3C blood pressure 116/76, pulse 80. Abdominal exam revealed distention. palpation was soft with lower abdominal tenderness, and auscultation revealed a high pitched bowel sounds. Laboratory investigations were insignificant; no leukocytosis, differential WBC showed elevation of Monocytes at 10.3%. with normal eosinophils. Normal liver function tests and renal profile. Chest and abdominal X-rays, erect and supine (Figure1) showed dilated bowel loops, however no air fluid levels, nor air under diaphragm were found. Abdominal CT (Figure 2) was performed and revealed sigmoid volvulus, with a dilated sigmoid measuring 16 cm in diameter with air, extending to the right upper quadrant, and there is swirling of its mesentery and mesenteric vessels at the left lower quadrant with the proximal completely distended colon.

No signs of perforation or signs of ischemia were seen. The patient was admitted to the hospital as a case of sigmoid volvulus, started on ceftriaxone and metronidazole, hydration and analgesia. The patient was taken for Emergency exploration as a suspected case of acute sigmoid volvulus.



**Figure 1:** Showed dilated bowel loops.



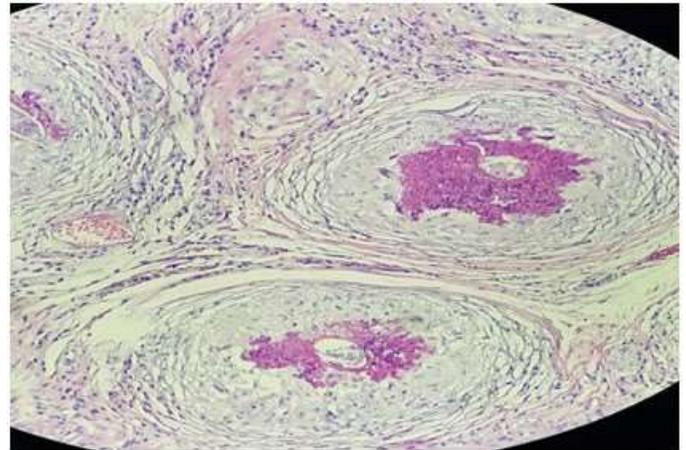
**Figure 2:** An abdominal computed tomography (CT)scan without contrast. Computed tomography of the abdomen and pelvis showing the site of mesenteric twist with swirling of blood vessels (blue arrow), consistent with volvulus (whirl sign).

#### 4. Surgical Findings

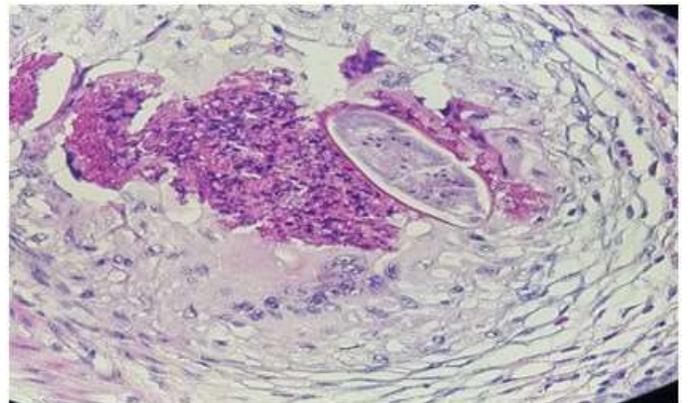
A long dilated sigmoid volvulus was found. The colon looked healthy, pinkish in color, with no signs of necrosis. No other pathology was found during exploration. Detorsion was done, followed by sigmoidectomy, with trans-anal end-to-end primary anastomosis using circular stapler. A resection of around 40 cm, including the affected segment, was performed and sent to the pathology department for further examination.

#### 5. Pathology Finding

Macroscopic examination showed a colon resection of 40 cm, including 19 cm with thinning of the mucosa, colonic diameter up to 14 cm, and a wall thickness down to 3 mm. Microscopic examination included Underlying the submucosa and tunica muscularis, non-necrotizing granulomas were found (Figure 3). A centrally located egg with a lateral spine characteristic of *S. mansoni* was found (Figure 4). A diagnosis of chronic intestinal *S. mansoni* infestation was made, and no other cause of sigmoid volvulus was found. Upon histopathology findings of the resected sigmoid colon, transmural granulomatous inflammation consistent with chronic intestinal Schistosomiasis was seen.



**Figure 3:** Showed Multinucleated giant cells forming non-necrotizing granulomas are also seen within the submucosa (black arrow). The center of the granulomas shows calcified ova of the *S. mansoni* parasite (red arrow).



**Figure 4:** Showed a centrally located egg with a lateral spine characteristic of *S. mansoni*.

## 6. Hospital Course

The patient had an uneventful hospital course. Discharged on the 3rd day post operative.

## 7. Discussion

Sigmoid volvulus is an uncommon cause of intestinal obstruction, accounting for 10%–13% of cases in most reported series [8]. Higher incidence among older adults with a mean age of 70 years at presentation. Sigmoid volvulus has been reported in younger patients with underlying Crohn's disease or chagas disease and in children in association with abnormal colonic motility [8]. Large bowel volvulus due to schistosomiasis is particularly unusual [9-12]. Up to our knowledge Only four cases were reported as an initial presentation of Schistosomiasis and was not previously diagnosed or suspected before the onset of volvulus [9-12]. Intestinal schistosomiasis is caused by infection due to *S. mansoni*, *S. japonicum*, *S. intercalatum*, *S. mekongi*, and occasionally, with *S. haematobium-S. bovis* hybrids [1]. Infected individuals usually present with chronic or intermittent abdominal pain, poor appetite, weight loss, diarrhea, and hematochezia [9,11]. To our knowledge, this is the fifth case of sigmoid volvulus incidentally found to have colonic schistosomiasis worldwide. In all cases, infection was not suspected before the sudden onset of volvulus. Our patient was a young, healthy adult with no comorbidities or previous surgeries, no previous signs or symptoms or predisposing factors for sigmoid volvulus. The diagnosis was made after the pathology report showed parasitosis, granulomatous inflammation, and eosinophilia consistent with schistosomiasis. The patient was diagnosed with intestinal *S. Mansoni* infection. Both in our case and the previous reports, the diagnosis of schistosomiasis was made by the pathologist. Stool examination later on was confirmative and the patient was subsequently treated with praziquantel in which he tolerated it well. And was followed for six months afterwards with no reported symptoms or signs of recurrence.

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