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Surgical Research

Colonic Perforation of Bilharzian Origin. About a Case at The Ndioum Regional Hospital

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ABSTRACT

Introduction: *Schistosomiasis is a parasitosis caused by a trematode. In Senegal, it is endemic in all regions. The aim of this work was to report a rare case of right colonic perforation secondary to gastrointestinal bilharziasis, with a review of the literature.*

Case Report: *A 15-year-old patient with no previous pathological history was admitted to the emergency department of the Ndioum regional hospital for abdominal pain with cessation of transit for 4 days. Clinical examination revealed an infectious syndrome, tenderness of the right iliac fossa and right flank, with parietal tenderness in the right iliac fossa and a cry from the umbilicus. Examination of the other systems was unremarkable. Ultrasound examination was consistent with acute appendicitis, with an anteroposterior diameter of 11 mm. Biological tests showed a hyperleukocytosis of 29,000 leukocytes/L and a positive CRP of 96mg/L. Exploration using the Mac Burney approach revealed an inflamed appendix and an inflamed cecum with an area of sphocele.*

We decided to convert to median laparotomy, which revealed an inflamed right colon with two areas of perforation on the ascending colon. A right hemi colectomy with ileo-transverse anastomosis was performed. The post-operative course was marked on day 4 by a right pleurisy requiring thoracic drainage. The patient was discharged on postoperative day 16. Pathological examination of the right ileo-colectomy specimen showed suppurative colitis associated with appendicular bilharziasis. The patient was started on praziquantel 1200mg in 2 doses taken 4 hours apart.

Conclusion: *Bilharzia is an endemic parasitosis in Senegal. It can evolve into complicated forms, hence the need for regular deworming campaigns.*

Keywords

Schistosomiasis, Gastrointestinal, Colitis, Appendicitis.

Introduction

Schistosomiasis is a parasitosis caused by a trematode [1]. Hundreds of millions of people in sub-Saharan Africa are affected [2]. In

Senegal, it is endemic in all regions, with prevalence exceeding 50% in some areas [3]. Human infection with schistosomes occurs through contact with water contaminated with flucocercariae, which are actively invading through the skin. Schistosomiasis mainly affects poor, rural communities, particularly farmers and fishermen. Adult worms live in blood vessels, where females lay their eggs. Some of the eggs are passed in the stool or urine. Others are trapped in tissues, causing immune reactions and progressive organ damage [1]. In gastrointestinal schistosomiasis, the eggs are deposited in the intestinal submucosa, causing abdominal pain and bloody diarrhoea; chronic colitis, ulceration, stenosis and inflammatory polyps may also develop [4].

Case Report

It was a 15-year-old patient with no medical history, admitted to the emergency department of the regional hospital of Ndioum for abdominal pain with cessation of transit evolving for 4 days. The clinical examination noted a preserved general condition, a blood pressure of 110/70 mm Hg, a heart rate of 98 cycles/min, a temperature of 38°C 8, an oxygen saturation of 95% in the ambient air. There were no signs of dehydration. Examination of the abdomen noted tenderness of the right iliac fossa and right flank with a parietal tusk in the right iliac fossa and a cry from the umbilicus. The other devices were unremarkable. The ultrasound performed was in favor of acute appendicitis with an anteroposterior diameter of 11mm. The blood test showed a hyperleukocytosis of 29,000 leukocytes/L and a positive CRP of 96mg/l.

Haemoglobin was 11.8g/dl, serum creatinine was 10.58mmmol/dl. The indication for a laparotomy has been made. The patient underwent emergency surgery under general anesthesia. Mac Burney's approach had noted an inflammatory appendage, an inflammatory cecum with an area of sphacele (Figure 1).

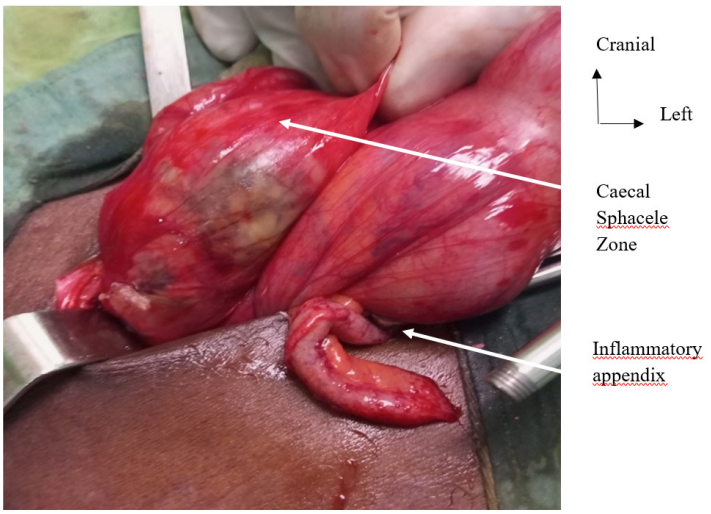

Figure 1: Intraoperative appearance, showing an inflammatory appendix and an area of caecal sphacele (photo Ndioum Regional Hospital).

We decide to convert to a median laparotomy what highlighted an inflammatory right colon with two perforation zones on the ascending colon, suspicious peritoneal fluid (Figure 2).

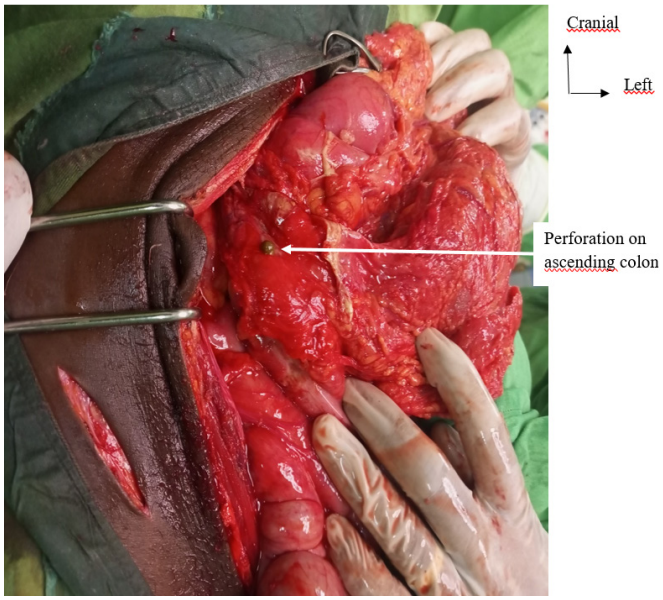

Figure 2: Intraoperative appearance, showing a perforation of the colon (photo Ndioum Regional Hospital).

We had carried out the following gestures:

- A right hemi-colectomy with ileo-transverse termino-lateral anastomosis by two hemi-overjets with absorbable thread, Polyglactin 910 USP 3/0 (vicryl® 3/0), reinforced by single stitches with the same thread (Figure 3).
- A peritoneal toilet with isotonic saline serum.
- A laparorraphy on a tubular drain.

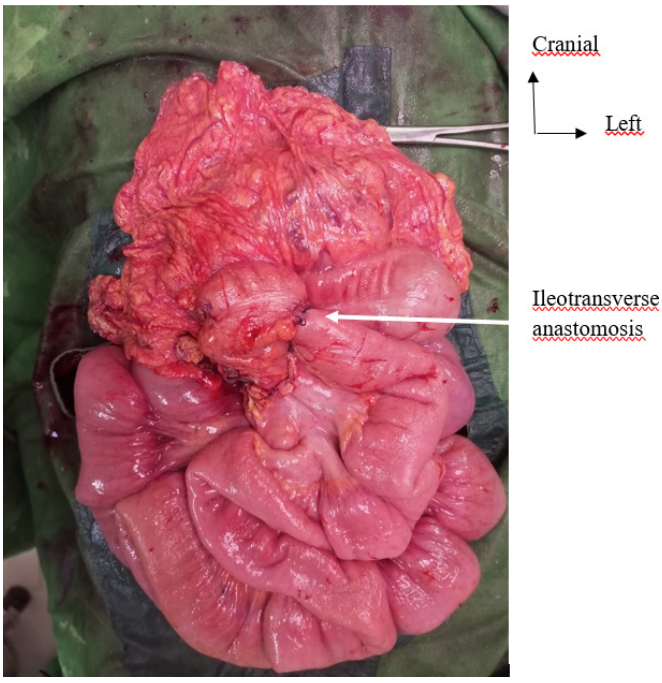

Figure 3: Intraoperative appearance, showing the digestive assembly at the end of the operation (photo Ndioum Regional Hospital).

Postoperatively, he had benefited from rehydration solutions, antibiotic therapy (Amoxicillin-clavulanic acid + Metronidazole) and analgesic treatment (paracetamol infuse 1g + Tramadol). The postoperative effects were marked on the 4th day by right pleurisy requiring thoracic drainage, the consequences of which were simple. The discharge was made on the 16th postoperative day. Anatomical pathological examination of the right ileocolectomy specimen showed suppurative colitis associated with appendicular schistosomiasis (Figure 4).

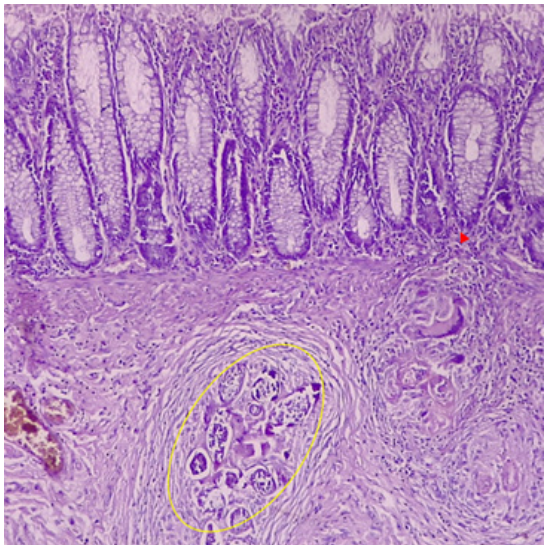

Figure 4: Intraoperative appearance, showing the digestive assembly at the end of the operation (photo Ndioum Regional Hospital).

The bilharzian test in urine and faeces was negative. The patient was put on praziquantel at a rate of 1200mg divided into 2 doses spaced 4 hours apart.

Discussion

Intestinal perforation is a highly unusual complication of bilharzia [5]. A review of the literature found five cases of intestinal perforation (excluding appendix) associated with schistosomiasis: one colonic perforation associated with S. japonicum [6]; one colonic perforation associated with S. japonicum [7]; one rectal perforation associated with S. haematobium [8]; one jejunal perforation associated with an adult Schistosoma worm [5]; one jejunal perforation associated with S. japonicum eggs [9].

Most intestinal lesions present as petechial haemorrhages or circumoval granulomas of the lamina propria or submucosa. Eggs retained in the intestinal wall cause inflammation, ulceration, microabscess formation and polyposis [4-10]. The intestinal pathological changes of schistosomiasis are similar to those of schistosomiasis-associated appendicitis. Two pathogenic pathways have been described to explain this occurrence in appendicitis. The first considers the role of feces, with its passage through an inflammatory, fibrous mucosa infected by the parasite. The second is a direct inflammatory lesion of the appendix induced by an immunological granulomatous reaction around the parasite eggs, leading to tissue destruction and appendicitis [8].

The clinical picture is not specific to bilharzia. It is a peritoneal irritation syndrome. The diagnosis of gastrointestinal bilharziasis is based on the detection of eggs in faecal samples [1]. Contrast-enhanced CT scans show extensive curvilinear calcifications or calcifications resembling streetcar tracks [10]. Stool parasitology did not reveal bilharzia eggs in our patient. We did not perform an abdominal CT scan on our patient. Ultrasound was definitive in the diagnosis of appendicitis. Confirmation of organ involvement by schistosomiasis is generally made by histological diagnosis, due to the absence of pathognomonic clinical or operative signs [11]. No intraoperative lesions pointed to a bilharzian origin of the perforation. Management of all forms of schistosomiasis infection has classically been praziquantel, which is effective against all schistosome species [12]. Management of acute intestinal colitis also focuses on oral praziquantel, with surgical management reserved for patients with acute intestinal complications such as perforation, bleeding polyps or obstruction [13]. We started the patient on praziquantel at à dose of 40mg/kg, i.e. 1200mg divided into 2 doses taken 4 hours apart. Parasite detection by stool and egg tests was negative in our case, so this treatment was aimed at forms that remained quiescent in tissues not accessible to these tests.

Conclusion

Bilharzia is an endemic parasitosis in Senegal. It can develop into complicated forms, hence the need for regular deworming campaigns. The diagnosis of colonic perforation of bilharzian origin is solely histopathological.

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