

Abdominal Surgical Complications Of Intestinal Parasites: A Review Of 13 Cases From Conakry Ignace Deen National Hospital, Guinea

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Abstract

Aim: We herein reported our experience in the management of abdominal surgical complications of intestinal parasites.

Methodology: This was a retrospective, descriptive study of 10 years from January 2001 to December 2010 including a consecutive series of abdominal surgical complications of intestinal parasites except amebiasis. The analysis concerned the demographic, epidemiological, clinical and therapeutic aspects of the patients.

Results: We observed 13 cases including ascarideal appendicitis (3 cases), acute intestinal obstruction by ascaris (3 cases), colorectal tumors of *Schistosoma mansoni* origin (6 cases) and ileal perforation with entry of *Taenia saginata* (1 case).

In addition to the surgical treatment of the lesion and the mechanical destruction of the parasites, a post-operative antiparasitic medical treatment was systematic in all patients. The post-operative courses were simple.

Conclusion: All these observations showed the diversity of clinical patterns of parasitosis in the tropic area.

INTRODUCTION

Apart from the digestive localizations of amebiasis and hydatid disease, intestinal nematodes, especially ascaris and to a lesser extent other cestodes, are the source of several types of surgical complications [1]. Aberrant migrations or occasional trespass of ascaris are among the major surgical complications in tropical environments [2-8]. These complications may occur as an acute abdomen (peritonitis or intestinal obstruction), an icteric syndrome or an abdominal mass syndrome. The clinical pattern is not specific and the etiological diagnosis is usually intraoperative [2-5]. The purpose of this study was to report our experience in the management of abdominal surgical complications of intestinal parasites.

METHODOLOGY

This is a retrospective descriptive study of 10 years from January 2001 to December 2010, including patients with abdominal surgical complications of intestinal parasites who were admitted and treated in the department of general surgery of Conakry Ignace Deen National Hospital, Guinea.

Excluded from this study were complications related to amebiasis (amebic liver abscess, colonic amebiasis...).

The diagnosis was based on the morphological aspect of the adult parasite and the identification of characteristic eggs of the parasite during a direct microscopic examination of stool performed postoperatively. In the case of schistosomiasis-related complications, a histological proof was obtained through histological examination of the resected specimen. In all cases, an anti-parasitic treatment was necessary in the postoperative period.

We analyzed the demographic, epidemiological, clinical and therapeutic aspects of the cases.

RESULTS

1. Complications related to ascariasis

We registered 6 cases including 5 boys and 1 girl with an average age of 9.6 years (extremes: 7 years and 12 years), students, living in urban areas. These patients were urgently admitted with an acute abdomen. Table 1 shows the clinical and therapeutic aspects of the patients.

Table 1

Clinical and therapeutic aspects

No	Age (years)	Diagnosis		Number of parasites	Surgical procedure
		Pre-operative	Post-operative		
1	12	Acute appendicitis	Acute appendicitis	1	Appendicectomy
2	9	Acute appendicitis	Acute appendicitis	1	Appendicectomy
3	10	Acute appendicitis	Acute appendicitis	1	Appendicectomy
4	7	AIO	Ascaris package	14	Enterotomy
5	11	AIO	Ascaris package	23	Enterotomy
6	9	AIO	Intussusception	39	Partial ileal resection

AIO: Acute Intestinal Obstruction

Postoperatively, all our patients received an anti-parasitic treatment with albendazole (Zentel™) 400mg daily for three consecutive days.

The postoperative course was uneventful, with an average length of stay of 6.8days (extremes: 3 days and 12 days).

2. Complications related to schistosomiasis

We reviewed 6 cases including 4 men and 2 women with an average age of 49.5 years (extremes: 36 years and 59 years), farmers, living in rural areas. These patients were admitted to hospital with a clinical and endoscopic diagnosis of rectal tumor (5 cases) or sigmoid tumor (1 case). A left hemicolectomy followed by colorectal anastomosis was performed in the case of sigmoid tumor and an anterior resection of the rectum followed by colorectal anastomosis in the cases of rectal location. The histological examination of the resected specimens revealed an inflammatory granuloma of *Schistosoma mansoni*, without signs of malignancy.

The postoperative course was uneventful except one case of wound infection. All patients received Praziquantel 40mg/kg body weight. The average duration of hospitalization was 13.5 days (extremes: 11 days and 18 days).

3. Complications related to Taenia saginata

A 64-year-old patient from a rural area was admitted in emergency for a clinical and radiological diagnosis of an acute lower intestinal obstruction.

A median laparotomy revealed an important peritoneal effusion of digestive liquid, fibrin deposits, agglutination and distended bowel loops. The exploration showed an ileal perforation of approximately 1cm in diameter located at one meter from the ileocecal junction with a taenia saginata (Figure 1A, 1B). Moreover, there was a volvulus of the

sigmoid colon without necrosis. After mechanical extraction of the taenia, measuring 7 meters, detorsion of the sigmoid, and a large peritoneal lavage with warm 0.9% saline, the intestinal perforation was repaired by a simple excision-suture procedure.

The postoperative course was marked by a mild wound infection. The patient was released on the 18th day after receiving an anti-parasitic treatment of Niclosamide and has not responded to the medical appointment for the surgical treatment of his dolichocolon.

Figure 1a

Engagement of a *Taenia saginata* through the ileal perforation.



Figure 1b

Extraction of the parasite



COMMENTS

Surgical complications of parasitosis are common in the tropical area. The number of 13 cases observed in our department seems to be far lower than the reality, given the high prevalence of parasitic infestation in our country and

the lack of systematic histological examination of all surgical specimens in our practice.

These complications usually concerned young subjects living in disadvantaged areas, within the age group of 4 to 12 years [9, 10, 11]. In their past history, often a notion of an adult worm vomited up by mouth or ejected through the anus is described [11].

Parasitic migrations or complications of engagement are secondary to an aberrant migration of the parasites either toward the annexes of the digestive tract, especially biliary and pancreatic [12], parasitic appendicitis, or to the passage of the parasite through the intestinal wall [1].

In a study on the etiologies of acute abdomen (n = 3464) in Cameroon, Essomba A et al. found 3.9% of parasitic origin (amebic liver abscess), 18% of acute intestinal obstruction by ascaris package, 15% appendicitis of parasitic origin, 3% of pancreatitis and/or cholangitis caused by obstruction of the ampulla of Vater by an adult ascaris, 3% of intestinal perforation by ascaris and 3% of intussusception by trichocephalus [7].

Appendicitis due to the migration of ascaris in the lumen of the vermiform appendix is still debatable since the symptoms of this migration can mimic appendicitis but rarely are the cause [13]. In our series, the intra-operative diagnosis of acute appendicitis was confirmed by histological examination. However, Wani et al. reported from a three-year study that among 11 patients operated for acute appendicitis with the presence of ascaris in the appendicular lumen, only 3 cases (27.3%) had inflamed appendix at the histological examination [13]. Actually, in the tropical area, appendicitis is often associated with parasitic infestation. Dorfman et al., in Venezuela, reported that out of 830 cases of appendicitis, there were 62 cases (7.46%) associated with intestinal parasites, particularly *Trichiuris trichiura* and ascaris [14]. In a series of 5,100 cases of appendicitis, Karatepe et al. [6] found 0.5% (24 cases) of parasitic infestation by ascaris. Schreiber et al. [15] observed 8 cases of appendiceal infestation by ascaris in 11 appendectomies in three years, with 1% of histologically normal appendix [13]. Similarly to the vermiform appendix, cases of Meckel diverticulitis with perforation or gangrene secondary to the incarceration of a parasite in the lumen of the diverticulum have been observed in zones of high parasitic infestation [9,16].

Acute intestinal obstruction is the result of a massive ascariasis. The mechanism is intestinal obstruction by an ascaris package; rarely a volvulus of an intestinal loop

overloaded with ascaris, an intestinal intussusception or a strangulated hernia containing an intestinal loop with ascaris package. [1]

In the cases of parasitic pancreatitis and or cholangitis (ascaris), ultrasound and percutaneous cholangiography can help to assess the pre-operative diagnosis [12].

The passage of a parasite through the intestinal wall is favored by a pre-existing impairment such as typhoid, tuberculosis or malignant tumors [7]. Intestinal perforation is the consequence of this parietal impairment and the parasite is only an accidental user as described in our case of *Taenia saginata*.

Finally, the involvement of *Schistosoma mansoni* infestation in carcinogenesis and its coexistence with colorectal tumors have been often reported in the literature [17,18,19]; however, the mechanism still remains unclear.

Over all, an anti-parasitic medical treatment is necessary after the mechanical destruction of the parasite during surgery.

CONCLUSION

All these observations revealed the diversity of the clinical appearances of intestinal parasitosis in the tropical area and also suggested the need to implement a national program for a free distribution of anti-parasitic drugs to children living in high parasite infestation regions.

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