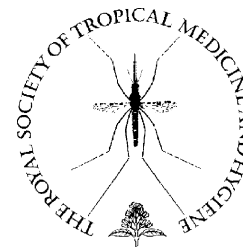




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CASE REPORT

Small bowel obstruction secondary to intestinal schistosomiasis

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KEYWORDS

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Summary Intestinal obstruction caused by chronic schistosomiasis infection is rare, with only 12 previously recorded cases in the literature. We report the first recorded case presenting to a European hospital. A 36-year-old Caucasian man, who was born and lived in the UK, presented with small bowel obstruction. He had visited China and Indonesia 8 years previously. At laparotomy, there was an obstructing inflammatory mass close to the ileocaecal junction and several small bowel strictures. Initially he was thought to have Crohn's disease. However, subsequent histology diagnosed intestinal schistosomiasis.

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1. Case report

A 36-year old Caucasian man presented with a 48-h history of generalised, colicky abdominal pain, vomiting, abdominal distension and absolute constipation. He had suffered intermittent abdominal pain, distension and diarrhoea for 2 years. He had no previous history of abdominal surgery. He was born and lived in the UK, but had spent a few weeks travelling in China and Indonesia 8 years previously.

On examination he was emaciated. He was afebrile and haemodynamically stable. His abdomen was distended and generally tender without peritonism. Bowel sounds were hyperactive.

Haemoglobin, white cell count (including eosinophils), and kidney and liver function were normal. C-reactive protein was 75 mg/l. A plain abdominal radiograph revealed small bowel obstruction. Computed tomography of the abdomen demonstrated air–fluid levels and an obstructing mass at the caecum (Figure 1). Laparotomy revealed an inflammatory mass at the terminal ileum, close to the ileocaecal valve, causing small bowel obstruction. There were several other strictures apparent in the small bowel. A right hemicolectomy was performed. Two strictures in the small bowel required resection (Figure 2).

The patient made a satisfactory post-operative recovery, requiring parenteral nutrition for 5 days until enteral feeding could be re-introduced. Histology from the resected specimen did not confirm Crohn's disease as expected. There was no evidence of fat wrapping. There were extensive areas of ulceration, which penetrated into the submucosa and muscularis. There was transmural inflammation with lymphoid aggregates. The most striking feature was the presence of a large number of eggs, many of

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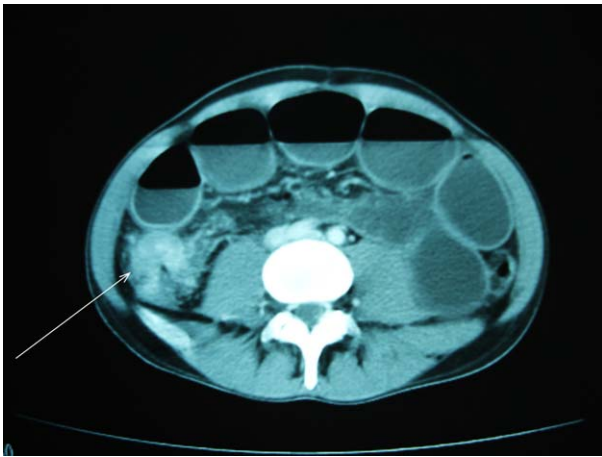


Figure 1 Computed tomography of the abdomen demonstrating an inflammatory mass at the ileocaecal junction (arrow), dilated small bowel loops with air–fluid levels and collapsed large bowel.

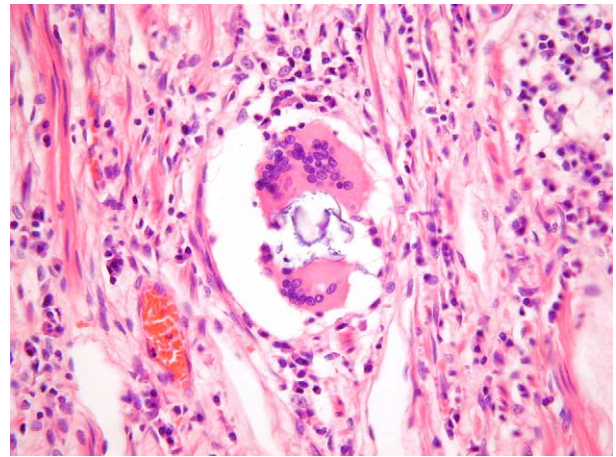


Figure 3 Histological section showing schistosome egg with associated granulomatous reaction.



Figure 2 Resected specimen.

which were calcified and associated with foreign body giant cell reaction, consistent with intestinal schistosomiasis (Figure 3). Unfortunately, it was not possible to identify the species of ova. Stool and urine were subsequently sent for microscopic examination, but no ova were identified. The patient received a single post-operative dose of praziquantel (40 mg/kg).

2. Discussion

Schistosomiasis affects 200 million people in 74 countries worldwide (Ross et al., 2002). Schistosome eggs may be retained in the bowel wall and not excreted in the faeces. They evoke a granulomatous reaction, and epithelioid cells, lymphocytes, eosinophils, giant cells and fibroblasts surround the ova (Elmasri and Boulos, 1976). Macroscopically, this causes inflammation, hyperplasia, ulceration and

microabscess formation within the bowel wall (Ross et al., 2002). Subsequent fibrosis may kill the ova and the lesion may become calcified. When the ovum load is high, the ova are deposited in all layers of the bowel. This induces a dense fibrotic and granulomatous reaction, with thickening of the bowel wall that may mimic carcinoma or regional ileitis (Iyer et al., 1985). Multiple granulomata can coalesce to form polyps or lead to stricture formation (Wright et al., 1976). However, these lesions rarely cause obstruction, with only 12 previously recorded cases in the literature (Table 1). All of these cases except one are from institutions in areas where schistosomiasis is endemic. To our knowledge, this is the first case presenting to a hospital in Europe.

The large bowel was affected in nine of the previously recorded cases. In six of these, the site of the obstructing lesion was in the descending colon, sigmoid or rectum, which are the commonest sites of ova deposition and thus granulomatous reaction (Elmasri and Boulos, 1976). In four of these cases the lesion was initially thought to be neoplastic in aetiology. The small bowel is less commonly affected.

Five species of schistosomes infect humans. In the previously reported cases, the causative organisms were *Schistosoma mansoni* or *S. haematobium*. Unfortunately, in the case presented here, the genus could not be identified owing to destruction of the egg architecture. However, *S. japonicum* is endemic in the region visited by the patient and this would be the first recorded case of intestinal obstruction following infection. Diagnosis of intestinal schistosomiasis may be confirmed on identification of ova in the stool. As discussed above, the diagnosis can also be made from histological examination of a resected specimen. Praziquantel may be given as a single post-operative dose of 40 mg/kg, although optimal therapy requires two to three doses of 20 mg/kg 6–8 h apart. Higher doses are often used against *S. japonicum* (60 mg/kg total dose) (Ross et al., 2002).

Intestinal schistosomiasis is a rare cause of intestinal obstruction, even in countries where the parasite is endemic. However, considering the popularity of travel to affected areas it is perhaps surprising that a case has not presented to a European hospital before. Clinicians should be alert to the diagnosis in patients with a relevant travel

Table 1 Previously reported cases of intestinal obstruction due to intestinal schistosomiasis

Authors	Area	Age (years)	Site	Species
Gelfand and Hammar, 1966	Zimbabwe	10	Caecum	<i>Schistosoma haematobium</i>
		18	Descending colon	<i>S. haematobium</i>
Elmasri and Boulos, 1976	Sudan	Not stated	Small bowel × 3	<i>S. mansoni</i>
			Sigmoid × 1	Not confirmed
Iozzi et al., 1984	Tanzania	18	Appendix	<i>S. haematobium</i>
Iyer et al., 1985	USA	47	Ileocaecal and ileum	Not confirmed
Bac et al., 1987	South Africa	20	Descending colon	<i>S. mansoni</i>
Elmasalme et al., 1997	Saudi Arabia	11	Rectosigmoid	Mixed
Atik et al., 1998	Brazil	25	Mid sigmoid	<i>S. mansoni</i>
Nicodemus and Congdon, 2001	Zambia	30	Sigmoid	<i>S. mansoni</i>

history. It is important to consider that the condition may be confused with malignancy or Crohn's disease, even at laparotomy. The diagnosis is often not apparent until formal histology is available. Praziquantel is recommended as an adjuvant to surgical management.

Conflicts of interest statement

The authors have no conflicts of interest concerning the work reported in this paper.

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