The attack of the Nematodes! Functional Large bowel obstruction due to Enterobius Vermicularis induced colitis?

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Abstract

Introduction: Bowel obstruction, a common surgical emergency, mostly results from mechanical obstruction. Functional obstruction can result from adynamism of a diseased segment of bowel. We present an instance of bowel obstruction caused by segmental colitis from infestation with Enterobius Vermicularis (EV).

Case presentation: A 55 year old man presented to our emergency department with clinical and Xray signs of acute large bowel obstruction. The obstruction resolved on insertion of a nasogastric tube with a subsequent Contrast enhanced CT scan showing resolution and no underlying cause. The situation recurred the next day in hospital with X ray features of obstruction at the rectosigmoid level. This was relieved with flatus tube decompression and and the released gas and liquid stools showed severe infestation with EV. A repeat Plain CT scan showed gross oedema of the rectosigmoid region with functional obstruction at that level. Flexible sigmoidoscopy and biopsy confirmed EV induced colitis with no mechanical obstruction and decompression relieved his symptoms.

Discussion: The patient responded well to treatment with Albendazole with complete resolution confirmed on repeat endoscopy at 8 weeks. While EV induced enterocolitis has been reported, this case demonstrates its potential to cause functional bowel obstruction.

Conclusion: Focal eosinophilic colitis from EV infestation can cause functional bowel obstruction. Clinical suspicion, imaging with contrast enhanced CT, stool examination and endoscopic biopsy is diagnostic and rules out other common mechanical causes. Decompression during the acute phase and antihelmithic therapy can be expected to aid resolution.

Keywords: Colitis, Colonic Pseudo-Obstruction, Parasitic worms.

Introduction

Bowel obstruction with abdominal pain in a middle aged male is a common surgical emergency. When initial investigations into such a case including a multislice contrast enhanced CT scan did not identify a possible cause, we were forced to think out of the box and reassess the situation.

Case presentation:

A 55 year old man was referred to our institute from a primary center with a two day history of worsening abdominal pain, distension and constipation. He was a heavy alcohol user with no other past medical co-morbidities. He gave no previous history of abdominal symptoms, illness, change of bowel habits or surgery. Vital parameters at presentation were stable apart from tachycardia. Clinical examination revealed a diffusely distended abdomen with no features to suggest focal or generalised peritonitis. A rectal examination at that stage was normal with a small amount of normal stool.

He was provided analgesia & a nasogastric (NG) tube was placed with relief of

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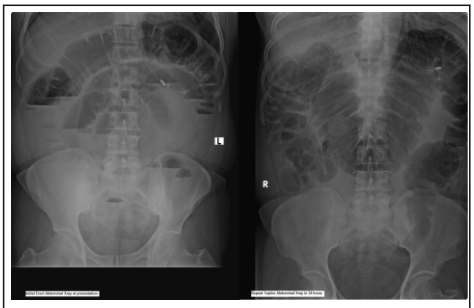

Figure 1. Abdominal X-ray features at presentation (left) and at 24 hours (right)

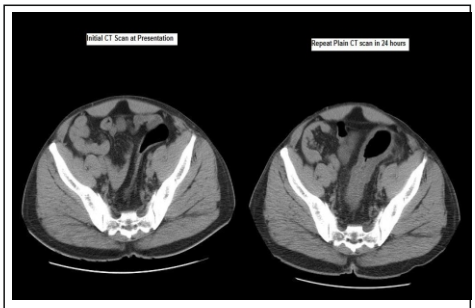

Figure 2. CT Abdomen trend over 24 hours: Left (initial) Right (24 hrs later)

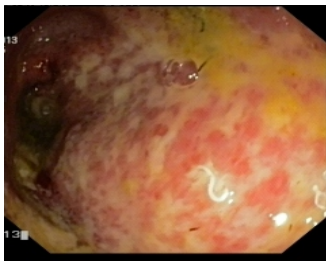

Figure 3. Flexible Sigmoidoscopy: Enterobius Vermicularis in the inflamed segment of Upper Rectum

distension and pain. An abdominal X ray showed few dilated loops of small and large bowel raising suspicions of a colonic obstruction of possible neoplastic origin. An erect chest X ray was normal. Blood investigations showed leucocytosis (20.5x 10 9/ lit) with normal CRP , serum lipase, renal functions and liver functions.

A contrast enhanced multislice CT scan done shortly after the NG was placed showed no abnormality or site of obstruction. The patient's symptoms settled overnight with minimal NG drainage. The NG tube was removed and oral intake commenced. He initially tolerated oral nutrition well but developed distension and abdominal pain again 24 hours from initial presentation. Abdominal examination revealed a tympanic tensely distended abdomen especially in the lower left quadrant. Rectal examination showed a very ballooned rectum & an abdominal x ray showed a distended sigmoid and proximal colon (Fig 1). A flatus tube was inserted with discharge of significant gas and liquid stools with visible profuse infestation with Enterobius vermicularis.

A repeat plain CT scan of the abdomen performed in view of this acute change in clinical scenario revealed oedema of the rectum & distal sigmoid colon (Fig 2) with distension of the colon proximal to this area. Flexible sigmoidoscopy was undertaken which revealed severe Enterobius vermicularis infestation and related procto-sigmoiditis (Fig 3) and distension of the otherwise unremarkable proximal colon with no mechanical obstruction. This was endoscopically decompressed. Biopsies from the inflamed rectosigmoid showed colitis with a dense eosinophilic infiltrate supporting a diagnosis of colitis in response to the nematode infestation.

High dose albendazole therapy at 400 mg per day was commenced for a period of 4 weeks. His symptoms resolved fully in 48 hours. He remained asymptomatic and follow up flexible sigmoidoscopy at 2 months showed complete resolution of parasitic infestation and colitis.

Discussion:

Pinworm infection is a common parasitic infestation especially in children. Older individuals may also be affected often due to lack of personal hygiene, care, nutritional and lifestyle reasons.

Enterobius Vermicularis (EV)is a luminal parasite belonging to the Nematode family. The female worm measures about 10 mm & males are half the size but are rarely seen as they die and are expelled shortly after copulation. They and are pearly white in colour and may be seen in the stools of affected individuals in severe infestations. The female worm migrates out to the anal verge especially at night and lays eggs causing perianal irritation (pruritis ani). The eggs contaminate the finger nails when the host itches the area [1], perpetuating the cycle with subsequent oral ingestion maturation in the small intestine and colonisation of the colon by the adult worm.

Though not usually dangerous and usually presenting with pruritis ani, it can rarely be the cause of other abdominal or systemic symptoms attributed to infestation. Accidental migration into the female genital tract, fallopian tubes and peritoneal cavity have been reported [2,3]. Migration to distant organs such as the liver, kidneys and even eyes have been described where they may produce lesions that mimic local pathologies which appear refractory to standard therapy or may lead to anxiety and unnecessary surgical intervention [4,5,6].

In the GI Tract, the presence of the parasites can produce a focal eosinophilic enteritis or colitis if they breach the mucosa. This inflammation may cause symptoms that suggest inflammatory bowel disease or gastroenteritis [7,8,9,10,11]. These can be diagnosed on stool examinations augmented by colonoscopy & biopsy. Treatment with anti helminthic medications such as Mebendazole, Albendazole & Pyrantel palmoate has been reported to be effective [1,9,10,11].

Bowel obstruction has not been a reported feature of EV infestation. Our case suffered functional large bowel obstruction at the level of the sigmoid descending colon junction in the absence of any mechanical obstruction. Severe eosinophilic colitis due to heavy and invasive EV infestation of the rectosigmoid region appears to have caused an adynamic zone precipitating large bowel obstruction in our patient. We used a prolonged course of Albendazole as is often done with Echinococcosis [12] due to the heavy parasitic load & severe presentation but we have no basis to suggest that this has any advantage over the standard dose regimen of albendazole.

Conclusion:

Eosinophilic colitis as a result of Enterobius Vermicularis infestation can cause functional colonic obstruction with diffuse thickening of colonic wall, mimicking bowel obstruction from neoplastic disease or inflammatory bowel disease. Early diagnosis with stool examination, lower GI endoscopy and biopsy and treatment with colonic decompression supported by appropriate antihelminthic agents is effective and safe.

Clinical relevance:
Appropriate use of Cross sectional imaging techniques & minimal access techniques such as GI endoscopy in modern clinical practise can help to optimise the use of major surgical interventions even in acute surgical presentations.

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