



CASE REPORT

REVISED Case Report: Rare presentation of adult intussusception at Orotta National Referral Hospital, Eritrea [version 2; peer review: 2 approved]

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Abstract

A 38-year-old woman presented at Orotta National Referral Hospital emergency department in May 2017 with pain in the epigastric region and vomiting. Physical examination revealed no pertinent findings. Blood and urine tests were normal, and erect abdominal x-ray revealed a distended small intestine with multiple layers of "air-fluid levels". CT scan and MRI were not done due to their temporary unavailability. During laparotomy a large mass of 20x20 cm in size was detected in the mid-jejunum of the small intestine. This leading tumor caused intussusception and coiling of the small intestine. As there are no typical symptoms of intussusception, it is very important to do CT scan for patients with long-standing abdominal pain and vomiting to achieve a definitive diagnosis of intussusception.

Keywords

Intussusception, Bowel obstruction, Abdominal pain

Open Peer Review

Reviewer Status

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	1	2
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1. **Yifan Wang**, McGill University Health Centre, Montreal, Canada

2. **Gennaro Martines** , University "Aldo Moro" of Bari, Bari, Italy

Any reports and responses or comments on the article can be found at the end of the article.

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REVISED Amendments from Version 1

Generally, there were a few minor changes required in the whole manuscript. In the legend part of [Figure 1](#), we corrected 'bowl' with bowel. We should emphasise that due to shortage of diagnostic equipment, MRI or CT scans or even histological analyses were not done. It would have made it much easier.

Any further responses from the reviewers can be found at the end of the article

Introduction

Intussusception is commonly defined as telescoping of a proximal part of an intestinal loop towards the distal part of the loop¹⁻⁶. The incidence of intussusception is 1–3 cases per 1,000,000 population per year^{2,7}. The condition is more frequent in children than in adults¹. Patients present sometimes with nonspecific symptoms^{8,9}. The majority of patients come to hospital with abdominal pain and vomiting⁹. As these are unspecific symptoms, diagnosis of intussusception could be missed or even delayed before one would entertain intussusception as a cause of abdominal pain¹⁰. The unspecific presentation makes it difficult to define clearly the diagnosis before surgical operations¹¹. Ordinarily, half of these cases are diagnosed in theater¹². Helpful diagnostic tests include plain abdominal film^{13,14}, abdominal CT scan¹⁵ and ultrasound¹⁶. Operative procedures to reduce the intestine is the treatment modality of intussusception¹⁷. In this paper we present a patient with intussusception with nonspecific symptoms who presented to Orotta National Referral Hospital, and emphasize the importance of early CT scan for quick and definitive diagnosis.

Case report

Presentation

A 38-year-old female patient presented to Orotta National Referral Hospital, Asmara, Eritrea, in May 2017 with abdominal pain and vomiting of 3-month duration. The pain was diffuse, intermittent and more on the periumbilical area. She only vomited after ingesting food, otherwise she does not. There is no history of abdominal distension and she was passing gas. Her condition gradually worsened from time to time. There was no history of fever, no bloody vomiting, and no history of jaundice or urinary complaints. There was no known family history of intestinal obstruction.

On physical examination, the patient appeared sick and emaciated, although vital signs were within normal limits. She had slightly pale conjunctiva and dry mucosa. She had good air entry on both lungs with normal heart sound. There was diffuse tenderness on the abdomen but more on the epigastric region. There was no guarding or rebound tenderness. There was no any palpable mass on the abdomen until 1 day before the operation, when a large suprapubic mass was detected. Bowel sounds were present.

Laboratory findings showed that complete blood count was within the normal limit. Hemoglobin of 10 g/dl (normal range, 12–16 g/dl), white blood cell count of $7 \times 10^3/\mu\text{l}$ (normal range,

$5-10 \times 10^3/\mu\text{l}$), platelet count of $350 \times 10^3/\mu\text{l}$ (normal range, $150-400 \times 10^3/\mu\text{l}$). Urinalysis revealed no abnormal finding and blood chemistry values were aspartate transaminase levels of 57 U/l serum (normal range, 8–48 U/L), alanine aminotransferase level of 43 U/l (normal range, 7–55 U/l), amylase of 191 U/l (normal range, 23–85 U/l). Several plain abdominal x-rays were done with no pertinent findings. The last time plain abdominal x-ray was done showed a distended small intestine and with multiple “air-fluid levels”. Ultrasound of the abdomen depicted pockets of fluid collections. No abnormality was observed upon gastroscopic study (mild duodenal ulcer with excessive bile reflux). CT scan and MRI were not available.

Despite the diagnostic challenges, several differential diagnoses were entertained, such as chronic peptic ulcer disease cholecystitis acute pancreatitis and partial intestinal obstruction and was managed conservatively. The patient was being treated as case of peptic ulcer disease before her surgical operation and was taking amoxicillin 1g twice daily and metronidazole 500mg twice daily for 10 days.

Surgical intervention

At 1 day before surgery, an abdominal mass was felt during repeated physical examination. Non-operative reduction using hydrostatic or pneumatic pressure by enema was not attempted. Surgical intervention was decided and performed 2 weeks after initial presentation, with an impression of small intestine obstruction secondary to malignancy. The patient was kept nothing per mouth (NPO) and was given normal saline intravenous fluid, broad-spectrum ceftriaxone (1 g intravenous twice a day) and metronidazole (500 mg intravenous three times a day). She was also given hydrocortisone (100 mg intravenous three times a day for 3 days). The patient was also administered 2 units of blood were before surgery. During laparotomy a large mass of 20×20 cm was identified in mid jejunum and a leading tumor had caused intussusception and coiling of the small intestine ([Figure 1](#) and [Figure 2](#)). During laparotomy, intussusception reduction was attempted manually but the large intestine was too greatly looped, tangled and edematous to be reduced so resection was decided. Around 1 meter of the bowel was

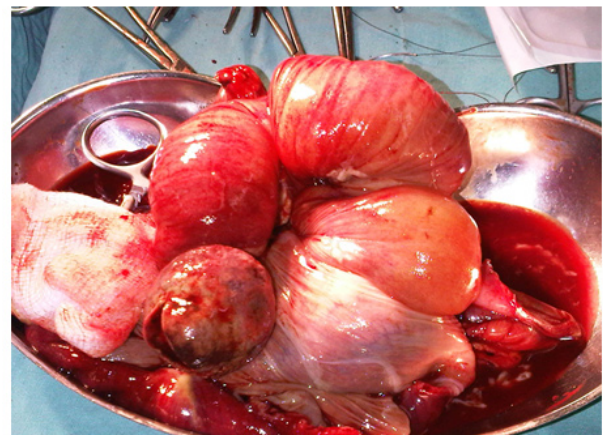


Figure 1. Resected bowel.

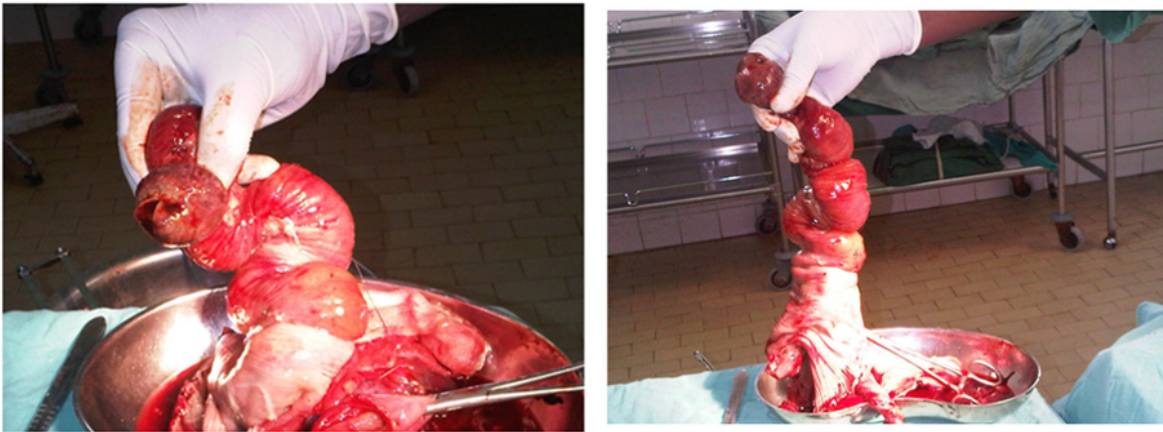


Figure 2. Mid jejunum with a leading tumor.

resected, and anastomosis was done in two layers. A biopsy of the leading tumor later showed it to be a simple hemangioma of the small intestine. In her postoperative management, she was kept NPO for 3 days and took intravenous fluids. Ceftriaxone and metronidazole were continued for 10 days. On her second day postoperatively, abdominal auscultation revealed the start of bowel sounds. She was discharged 2 weeks after surgery and was appointed to come for her follow-up after a month. In her follow up visit full remission was confirmed.

Discussion

The preoperative diagnosis of intussusception remains challenging as the patients usually have nonspecific symptoms during their presentation to medical facilities¹¹. CT scans aid diagnosis considerably and usually shows a “bull’s-eye” sign^{18,19}. Early in her presentation, the patient did not have signs of intestinal obstruction, but because of her persistent vomiting and epigastric pain other diagnoses were suggested. The diagnosis

was greatly delayed partly because of diagnostic constraints. The temporary unavailability of the only CT scanner in the whole country made it difficult for early and accurate diagnosis. Looking at the importance of CT scan and MRI in the diagnosis of many medical and surgical conditions, it is highly recommended that the Eritrean Ministry of Health should import several additional CT scans or MRIs for a successful diagnosis and management of such health conditions. It is recommended as well to use CT scan as early as possible when a patient is suffering from a long-standing abdominal pain and vomiting.

Data availability

No data is associated with this article.

Consent

Written informed consent for publication of their clinical details and clinical images was obtained from the patient.

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Yifan Wang

The Research Institute, McGill University Health Centre, Montreal, QC, Canada

I now approve this article for indexing.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Gastrointestinal surgery

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Version 1

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Gennaro Martines 

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Intussusception is 1-5% of causes of intestinal ileus and double intussusception is an even more exceptional observation. CT and MRI are the gold standard for diagnosis but ultrasonography can be an effective diagnostic tool and demonstrates multiple concentric rings associated with an abdominal echogenic mass and echolucent rings representing the mucous covering of the

intussuscepted bowel segment.

I think that this description is due in the presentation of ultrasonography. for the differential diagnosis.

Some English errors like bowl in figure 1.

Add in references this article which well describe a case like this:

Fabio Marino¹, Pierluigi Lobascio, Gennaro Martines, Angela D Di Franco, Marcella Rinaldi, Donato F Altomare Double jejunal intussusception in an adult with chronic subileus due to a giant lipoma: a case report *Chir Ital* Mar-Apr 2005;57(2):239-42.¹

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1. Marino F, Lobascio P, Martines G, Di Franco AD, et al.: Double jejunal intussusception in an adult with chronic subileus due to a giant lipoma: a case report. *Chir Ital.* **57** (2): 239-42 [PubMed Abstract](#)

Is the background of the case's history and progression described in sufficient detail?

Partly

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Yes

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Yes

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: General surgery

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 17 February 2020

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Yifan Wang

The Research Institute, McGill University Health Centre, Montreal, QC, Canada

Lyassu *et al.* describe a rare case of adult small bowel-small bowel intussusception caused by an

intestinal hemangioma that was treated with surgical resection.

The diagnosis was challenging because of the lack of institutional availability of cross-sectional imaging (CT/MRI). It would be informative to add an image of the abdominal x-ray showing air-fluid levels. Also, it is unclear what the "pockets of fluid collections" visualized on abdominal ultrasound represent.

It would be interesting to show histopathological correlation of the intestinal hemangioma (H&E section). There are only a handful of such cases causing intussusception in the literature, and the authors may want to summarize this experience in the discussion.

Figure 1. legend should read "bowel", rather than "bowl".

Is the background of the case's history and progression described in sufficient detail?

Yes

Are enough details provided of any physical examination and diagnostic tests, treatment given and outcomes?

Partly

Is sufficient discussion included of the importance of the findings and their relevance to future understanding of disease processes, diagnosis or treatment?

Partly

Is the case presented with sufficient detail to be useful for other practitioners?

Yes

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Gastrointestinal surgery

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

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