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## Intussusception secondary to endometriosis of the cecum

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## ABSTRACT

**INTRODUCTION:** Intussusception in adults is a rare cause of bowel obstruction. Endometriosis of the bowel is also a rare entity that can be the cause of bowel obstruction. Here, we report a rare case of intussusception secondary to endometriosis of the cecum.

**PRESENTATION OF CASE:** A 40-year-old woman presented to the hospital with a one-week history of intermittent epigastric pain. On physical examination, there was a soft, round non-tender palpable mass in the right flank and abdominal computed tomography scan revealed an intussusception. We made the diagnosis of ileo-colic intussusception and performed ileocecal resection. The surgical specimen revealed a round submucosal cystic mass in the cecum and the histology showed endometriosis of the cecum.

**DISCUSSION:** Intussusception in adults is a rare entity present in just 1% of all patients with bowel obstruction, and 5% of all intussusceptions. In general, intussusception in adults has a pathologic lesion as the lead point and the lesion is a malignancy in 20–50% of the cases. Thus, the treatment of an intussusception in adults should be operative. Endometriosis of the bowel is a rare cause of intussusception. Small endometriosis lesions of the bowel are unlikely to cause symptoms; however, in patients presenting with bowel obstruction, urgent treatment is indicated.

**CONCLUSION:** Intussusception in an adult is a rare cause of bowel obstruction and intussusception caused by endometriosis is also rare. Although rare, the diagnosis of endometriosis as a cause of intussusception must be considered as part of the differential diagnosis.

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## 1. Introduction

Intussusception in adults is a rare cause of bowel obstruction present in just 1% of all patients with bowel obstruction.<sup>1</sup> Endometriosis of the bowel is also a rare entity that can be the cause of bowel obstruction. Here, we report a rare case of intussusception secondary to endometriosis of the cecum.

## 2. Presentation of case

A 40-year-old woman presented to the hospital with a one-week history of intermittent epigastric pain. She had a past medical history of an atrial septal defect repair, appendectomy, and Caesarean section. One week prior to admission, she noted intermittent epigastric pain. She took over-the-counter medications but the pain

persisted. Two days prior to admission, she visited her general practitioner and was prescribed probiotics.

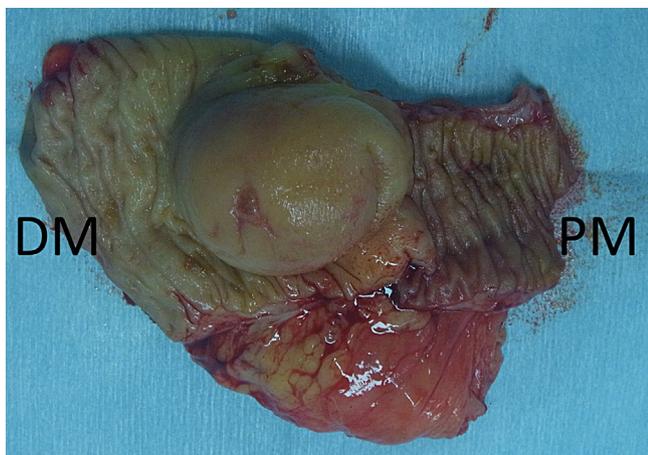
Despite this treatment, the pain persisted and her general practitioner obtained an abdominal computed tomography (CT) scan, which revealed an intussusception. She was then referred for further investigation. On physical examination, there was a soft, round non-tender palpable mass in the right flank. Abdominal CT scan revealed that an ileocecal lesion invaginated into the ascending colon. A round cystic lesion at the lead point was seen, suggesting a possible mucocele of the appendiceal stump (Fig. 1).

We made the diagnosis of ileo-colic intussusception and an operation was urgently performed. On exploring the intra-abdominal cavity, a soft, round mass was palpable in the ascending colon. There was no ascites, no adhesions, no lymphadenopathy, and no other abnormalities such as nodules or masses noted throughout the abdomen during surgical exploration. The intussusception was almost fully reduced but a part of the greater omentum and terminal ileum invaginated into the ascending colon. The mass seemed to originate in the cecum, and the gross appearance of the

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**Fig. 1.** A coronal view from the abdominal CT scan suggesting ileo-colic intussusception. There is a round cystic lesion at the lead point (arrow).



**Fig. 2.** The surgical specimen revealed a round submucosal cystic mass. PM: proximal resection margin. DM: distal resection margin.

lesion was not consistent with malignancy. We then performed an ileocolic resection. Her postoperative course was uneventful and she was discharged from the hospital on postoperative day eight. The surgical specimen revealed a round submucosal cystic mass in the cecum (Fig. 2). The histology showed endometrial glands in the muscularis propria of the cecum, compatible with endometriosis of the cecum.

### 3. Discussion

Intussusception in adults is a rare entity present in just 1% of all patients with bowel obstruction, and 5% of all intussusceptions.<sup>1</sup> Intussusception is classified into four categories: enteric, ileocolic, ileocecal, and colonic. Enteric and colonic intussusceptions are those that are confined to the small intestine and large intestine, respectively. Ileocolic intussusceptions are defined as those with prolapse of the ileum through the ileocecal valve into the colon. Ileocecal intussusceptions are defined as those with the ileocecal

valve as the lead point for the intussusception.<sup>1</sup> Intussusception in adults has a pathologic lesion as the lead point in 70–90% of patients. In 20–50% of adult patients with an intussusception, the lesion is a malignancy.<sup>1</sup> Thus, the treatment of an intussusception in adults should be operative. Endometriosis is an oestrogen dependent disorder associated with pelvic pain and infertility.<sup>2</sup> The prevalence of pelvic endometriosis approaches 6–10% in the general female population.<sup>2</sup> The frequency of endometriosis of the bowel is estimated to be<sup>3</sup> to 18.5%.<sup>2–4</sup> The location of endometriosis in the bowel varies, the most likely being in the rectum and sigmoid colon, followed by the appendix or ileocecal region.<sup>2–4</sup>

The exact pathogenesis of endometriosis remains obscure but the most widely accepted theory is that it originates from retrograde menstruation of endometrial tissue sloughed through the fallopian tubes into the peritoneal cavity.<sup>2</sup> In this patient, according to the intraoperative findings, which showed no evidence of other areas of endometriosis, we suspect that the buried appendiceal stump may be the origin of the endometriosis.

In general, small endometriosis lesions of the bowel are unlikely to cause symptoms, suggesting that surgical resection may not be necessary. However, in patients presenting with bowel obstruction, urgent treatment is indicated.<sup>4</sup>

In general, the diagnosis of intussusception is readily made by CT scan. However, it is difficult to confirm the pathogenesis of the lesion at the lead point by imaging studies alone.<sup>5</sup> Establishing the diagnosis of endometriosis of the bowel is also difficult. The evaluation of symptoms and physical examination alone are usually inadequate to establish the diagnosis of endometriosis of the bowel.<sup>4</sup> Although there is no gold standard accepted for the diagnosis of bowel endometriosis, magnetic resonance imaging (MRI) or multi-detector CT scan has been commonly used.<sup>4</sup>

### 4. Conclusion

Intussusception in an adult is a rare cause of bowel obstruction and intussusception caused by endometriosis is also rare. The diagnosis of endometriosis as a cause of intussusception must be considered as part of the differential diagnosis, especially in women previously diagnosed with endometriosis or during the reproductive age.

### Conflict of interest statement

All authors declare that there is no conflict of interest.

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None.

### Ethical approval

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

### Author contributions

Hideki Katagiri, Tetsuo Nakata, Toshikazu Matsuo and Isao Shimokawa undertook the gathering of information for this case. Hideki Katagiri and Alan Kawarai Lefor were a major contributor in writing the manuscript. All authors read and approved the final manuscript.

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