



Case report

Sigmoid colon strangulation caused by bilateral fallopian tubes: A case report

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ABSTRACT

Introduction: There are no reports regarding sigmoid colon strangulation caused by bilateral fallopian tubes, which is a rare type of large bowel obstruction. Herein, we report a case of successful laparoscopic treatment of sigmoid colon strangulation.

Presentation of case: A 54-year-old woman presented to our hospital with intermittent abdominal pain. Her medical history was significant for endometriosis; however, there was no surgical history. The physical examination revealed tenderness over the lower abdomen. CT scan shows closed loop obstruction of sigmoid colon. Exploratory laparoscopy was performed, and a sigmoid colon strangulated by bilateral fallopian tubes was detected. The adhesions consisting of bilateral fallopian tubes were dissected laparoscopically. The patient's postoperative course was uneventful, with no complications.

Discussion: The most common cause of large bowel obstruction (LBO) is colorectal cancer, including volvulus and diverticulitis. In this case, the adhesion of both the right and left fallopian tubes caused LBO, and it is conceivable that the etiology involved is endometriosis.

Few cases have reported bowel obstruction associated with a fallopian tube, and the laparoscopic approach is very rare. In our case, we immediately performed laparoscopic exploration before colon strangulation led to necrosis or perforation. Therefore, we succeeded in releasing the strangulation laparoscopically.

Conclusion: We report a case of sigmoid colon strangulation that was treated laparoscopically. This approach can be the treatment of choice for sigmoid colon strangulation.

1. Introduction

Sigmoid colon strangulation without volvulus is a rare cause of large bowel obstruction (LBO) [1]. There are no reports regarding sigmoid colon strangulation caused by bilateral fallopian tubes in the literature. Herein, we report a case of successful laparoscopic treatment of sigmoid colon strangulation with a literature review. This study is reported in line with the SCARE criteria [2].

2. Presentation of case

A 54-year-old woman presented to our hospital with a 9-hour history of intermittent abdominal pain. Her medical history was positive for endometriosis; however, there was no surgical history. She had no regular medication, no smoking-history, and her body mass index (BMI)

was 18.1. Her vital signs were unremarkable, and abdominal examination revealed tenderness over the lower abdomen. Laboratory tests were unremarkable. Computed tomography (CT) showed a closed loop obstruction of the sigmoid colon (Fig. 1). An hour later, the patient was transferred to the operating room to undergo an emergency laparoscopic exploration. We performed laparoscopic exploration using a rigid scope (Precision IE Laparoscopes, Stryker Japan K.K., Tokyo, Japan). The procedure was performed by a general surgeon with a career of 9 years and a 4th year general surgery resident. A 10-mm port was inserted using open method into the umbilical incision due to induce pneumoperitoneum, and 5-mm ports were inserted in the left and right lateral abdomen (placed at 10-cm lateral to midline). Laparoscopic findings showed a strangulated sigmoid colon in bilateral fallopian tubes (Fig. 2a, b), and the sigmoid colon was viable and not necrotic. There were no laparoscopic findings of other signs of endometriosis except adhesion of

Abbreviations: LBO, large bowel obstruction; CT, computed tomography.

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fallopian tube. We released the strangulation by laparoscopically dissecting the adhesions consisting of bilateral fallopian tubes but we didn't need to performed salpingectomy (Fig. 3). The postoperative course was uneventful without any complications; thus, the patient was discharged on postoperative day 5.

3. Discussion

In general, small bowel obstruction (SBO) is common, but LBO only develops in up to 25% of cases [3]. The most common cause of LBO is colorectal cancer, including volvulus and diverticulitis. The etiology of colon strangulation without volvulus and hernia is very rare, case reports have reported LBO caused by appendiceal mucocele, urinary retention, gallstone ileus, endometriosis, and mycobacterium tuberculosis [4–7]. In this case, the adhesion of both the right and left fallopian tubes caused LBO. Five cases have reported bowel obstruction associated with a fallopian tube [8–12], and the first report in the literature was SBO caused by a strangulating ectopic fallopian tube [8]. Three cases uncovered strangulated bowel obstruction due to coiling after hysterectomy and ovarian preservation [9–11], and one case involved strangulation of the mobile cecum by an elongated fallopian tube [12]. In our case, the etiology of adhesion of fallopian tubes remains unknown, but endometriosis can be accounted for in part. Endometrial cell reflux occurs via the fallopian tubes during menstruation and can be implanted into the peritoneal cavity. Once endometriosis is established, these lesions lead to inflammatory changes and adhesions [13]. Therefore, the history of endometriosis might be due to the etiology of the adhesion of fallopian tubes.

In surgical management, bowel strangulation requires emergency surgery. Management must begin as soon as colon strangulation is diagnosed or suspected because it is an urgent and critical disease. Colon strangulation with necrosis or perforation can increase the risk of complications, morbidity, and mortality. In our cases, we performed laparoscopic exploration immediately before colon strangulation led to necrosis or perforation. Therefore, we succeeded in releasing the strangulation laparoscopically. However, if laparoscopic findings reveal the colon in a non-viable state, we have no choice but to convert to laparotomy. Thus, it goes without saying that early diagnosis and treatment is imperative in the management of sigmoid colon

strangulation.

4. Conclusion

We report a case of sigmoid colon strangulation caused by fallopian tubes, and laparoscopic treatment was useful in this case.

Ethical approval

The ethical committee of our institution exempted the approval of this report.

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CRediT authorship contribution statement

Dr. Yuto Igarashi, the first and corresponding author, drafted and finalised the manuscript, and performed the surgery. Other doctors, Jun Kawachi, Rai Shimoyama, Hiroyuki Kashiwagi, Katsunori Miyake, Naoko Isogai have cooperated in this manuscript.

Guarantor

Yuto Igarashi

Registration of research studies

None

Consent

Written informed consent was obtained from the patient for the 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.

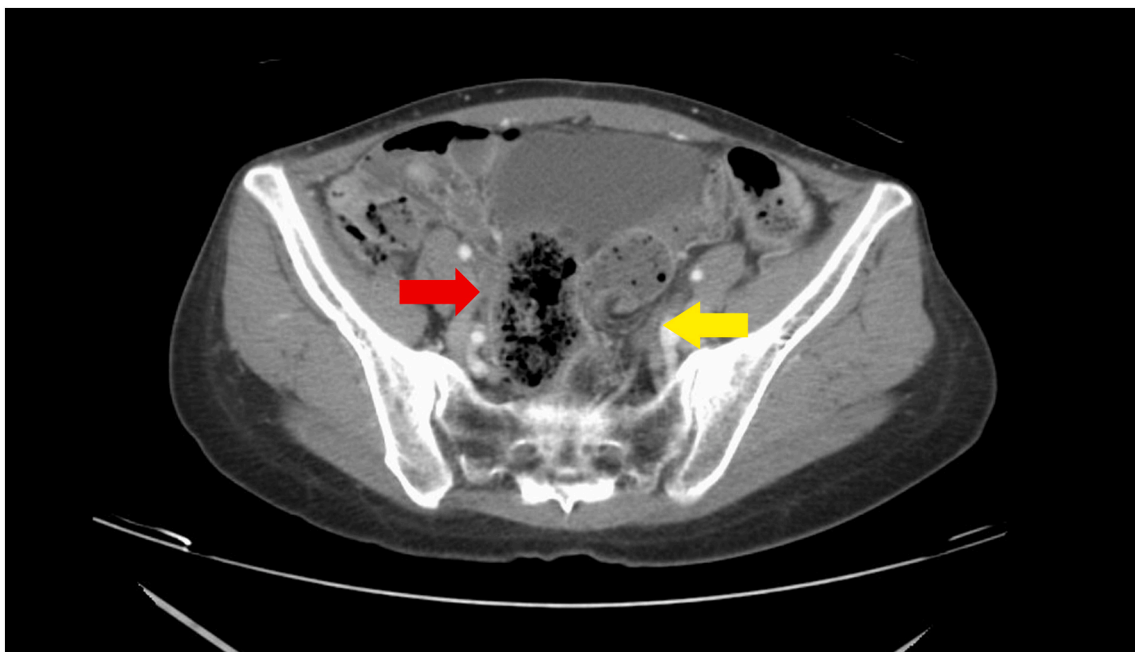


Fig. 1. Contrast CT shows closed loop obstruction of sigmoid colon (yellow arrow).

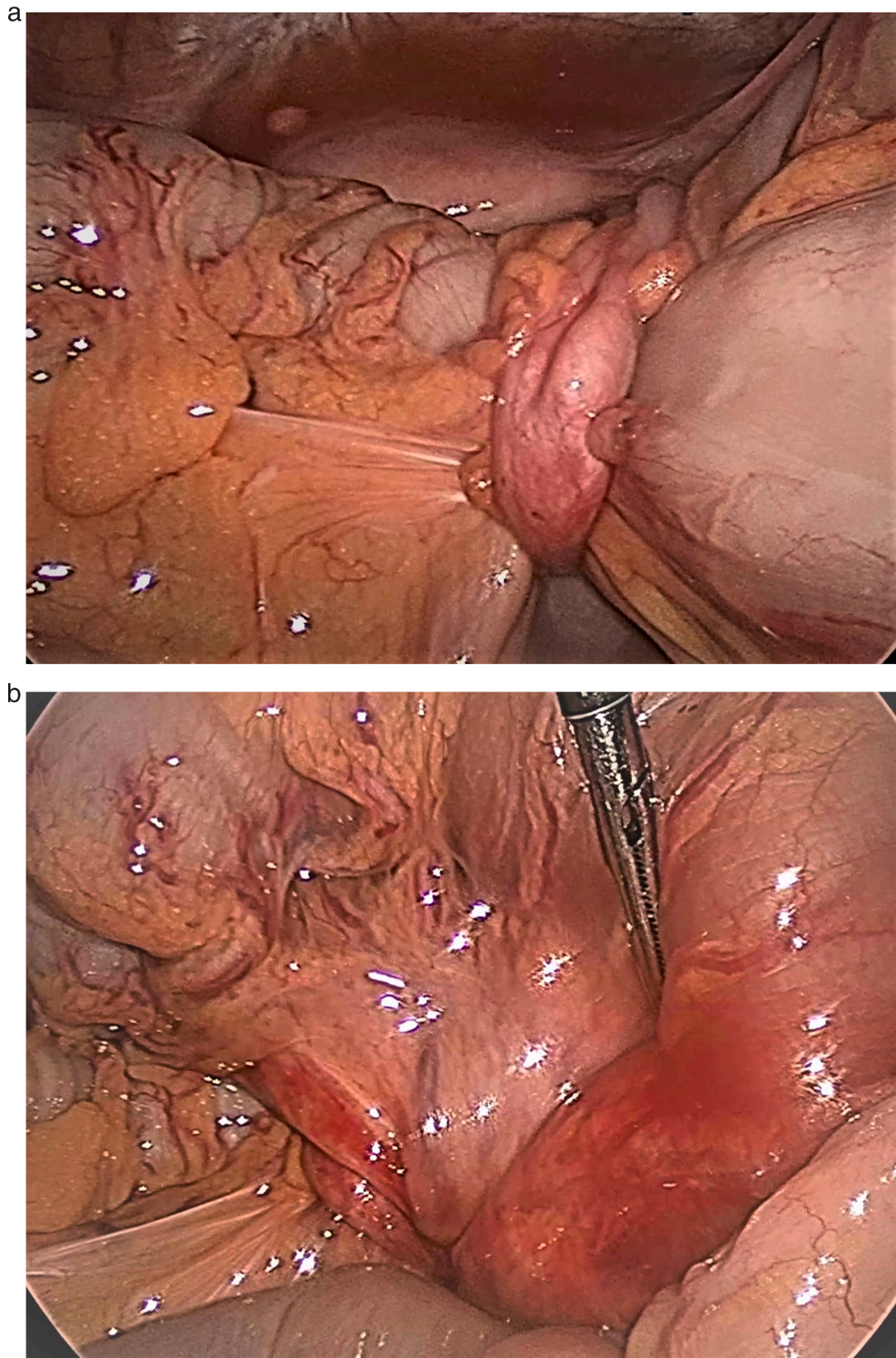


Fig. 2. (a) (b) Laparoscopic findings show sigmoid colon strangulated by bilateral fallopian tubes.

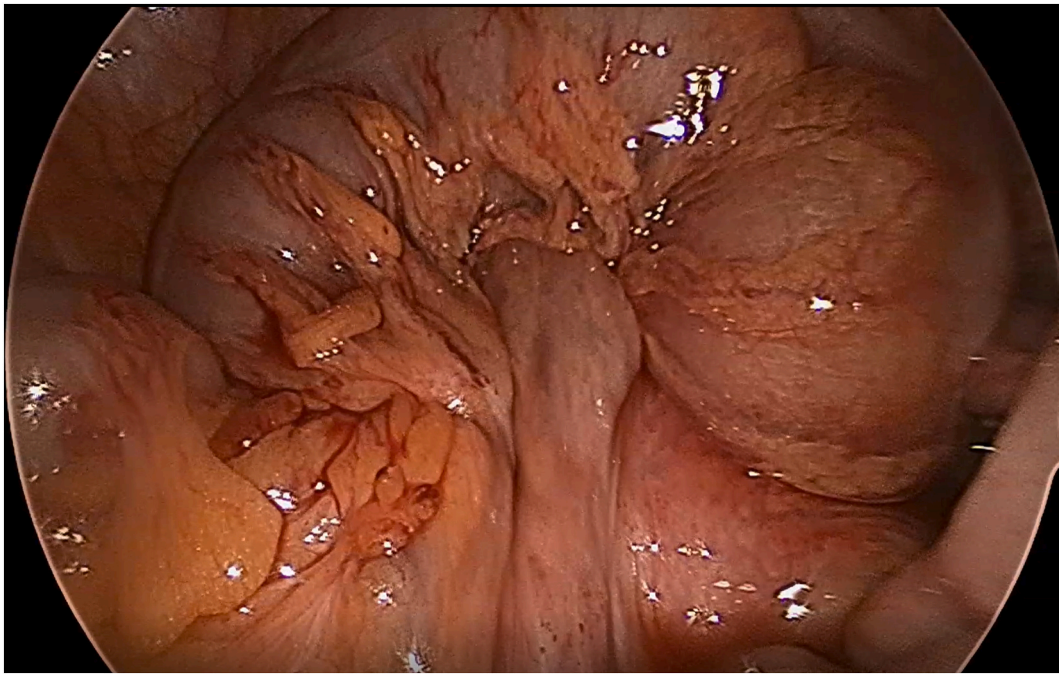


Fig. 3. Laparoscopic findings show sigmoid colon after release of strangulation.

Declaration of competing interest

None.

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