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Case Report

Twisted ovarian dermoid cyst with sigmoid colon volvulus: a rare cause of closed-loop obstruction

Sachin Santosh Narate[1]*, Gowri M. Pisharody[1], Sher Singh Dagur[1], Arun Kumar Singh[1], Shashi Arora[2]

[1]Department of GI & General Surgery, Yashoda Hospital & Research Centre, Ghaziabad, Uttar Pradesh, India
[2]Department of Obstetrics and Gynaecology, Yashoda Hospital and Research Centre, Ghaziabad, Uttar Pradesh, India

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***Correspondence:**
Dr. Sachin Santosh Narate,
E-mail: snarate@gmail.com

ABSTRACT

Ovarian dermoid cysts (mature cystic teratomas) are common benign ovarian tumors, but they rarely cause intestinal obstruction. We present an extremely rare case of a large twisted left ovarian dermoid cyst with an edematous pedicle, around which the sigmoid colon had looped, leading to a closed-loop obstruction, rarely seen in young adults, which can be a life-threatening condition, if remains untreated. A 34-year-old female presented with left lower abdominal pain since three days, associated with obstipation and multiple episodes of non-bilious vomiting. Contrast-enhanced computed tomography (CECT) of the abdomen revealed a large left ovarian dermoid cyst with a twisted pedicle, causing sigmoid colon entrapment and luminal narrowing. She underwent an emergency exploratory laparotomy with resection of the redundant sigmoid colon and side-to-side colocolic anastomosis along with left oophorectomy. The patient had an uneventful recovery and was discharged on post-operative day 6 with soft diet and a healthy wound. This case highlights a rare but significant complication of ovarian dermoid cysts leading to intestinal obstruction.

Keywords: Ovarian dermoid cyst, Closed-loop obstruction, Ovarian torsion, Sigmoid colon volvulus, Exploratory laparotomy

INTRODUCTION

Mature cystic teratomas, commonly known as dermoid cysts, are among the most frequent benign ovarian neoplasms, constituting 20–25% of ovarian tumors, in younger age group (mean age group 30 years). Although torsion is the most common complication, leading to ischemia and infarction, an associated intestinal obstruction is rare. Adnexal torsion is one of the top causes of gynaecological emergencies, with a prevalence ranging from 3% to 5%.[1] Closed-loop obstruction due to sigmoid colon entrapment around a twisted ovarian cyst pedicle is an unusual presentation with significant clinical implications like potential for ischemia and perforation with rapid deterioration.

We present a unique and extremely rare case of a twisted left ovarian dermoid cyst causing entrapment and narrowing of the sigmoid colon, leading to a closed-loop obstruction, which was successfully managed surgically.

CASE REPORT

A 34-year-old married female presented to the emergency department with left lower abdominal pain for three days, inability to pass flatus and motion for two days, and multiple episodes of non-bilious vomiting for one day. She had no prior history of similar episodes or significant gynaecological complaints. No history of trauma to abdomen, burning micturition, fever, haematuria, melena or bleeding per vagina. No known comorbidities, no

significant surgical or medical history. With history of lower segment caesarean section (LSCS) 4 years back, her obstetric score was G1P1L1A0. Last menstrual period 5 days before presentation to emergency room. On examination, she had tachycardia but was hemodynamically stable. She had abdominal distension and guarding along with tenderness in the left lower quadrant. On palpation, no mass was palpable and hernial orifices were normal. Resonant note over left lower abdominal quadrant. Bowel sounds were diminished. Per rectal examination revealed an empty rectum.

Investigations

Blood tests

Haemoglobin was 12.1 g/dl, white blood cell counts were 14,500/mm³ (suggestive of inflammatory response), electrolytes were Na^+ 138 mmol/l and K^+ 3.5 mmol/l, serum lactate was normal, and C-reactive protein was 5.65.

Imaging

Contrast enhanced computed tomography (CECT) of abdomen and pelvis indicated large left ovarian dermoid cyst (~10 cm) with a thickened, oedematous and twisted pedicle. Sigmoid colon was looping around the pedicle, causing luminal narrowing. Findings were suggestive of closed-loop obstruction.

Figure 1: (a) Coronal view, (b) axial view, and (c) sagittal view.

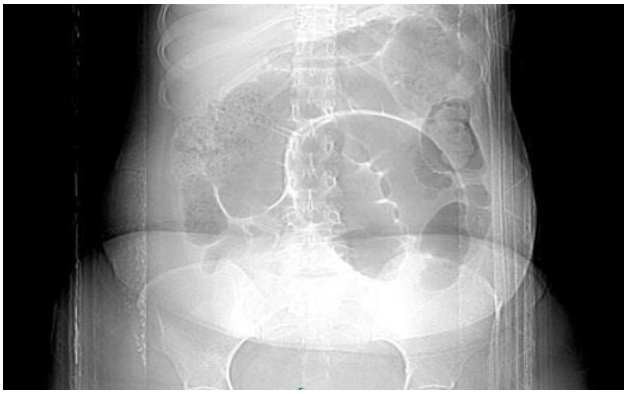

Figure 2: Scout view of abdomen.

Surgical management

After initial management with intravenous fluids, antibiotics, and nasogastric tube insertion. The patient was taken for an emergency exploratory laparotomy.

Intra-operative findings revealed the following.

A large twisted left ovarian mass (10.5×8.5×6.0 cm) with smooth external surface and congested with a thickened, oedematous pedicle with gangrenous changes. The sigmoid colon was looped around the pedicle, causing a closed-loop obstruction. A redundant segment of the sigmoid colon was found with compromised vascularity. Resection of the redundant sigmoid colon was performed with a side-to-side colo-colic anastomosis. The ovarian dermoid cyst was excised along with the left ovary.

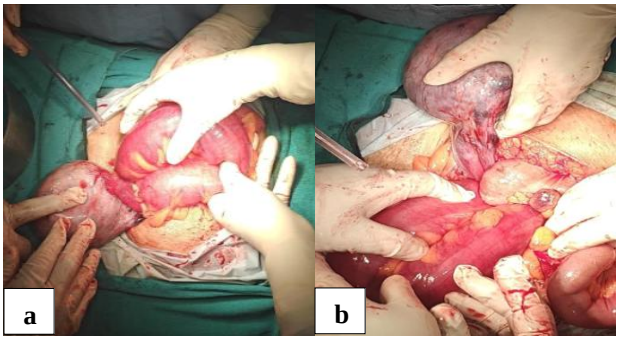

Figure 3 (a and b): Intra-operative images depicting large ovarian dermoid cyst with sigmoid colon volvulus loop and 180° torsion of sigmoid colon loop around pedicle of ovarian dermoid cyst.

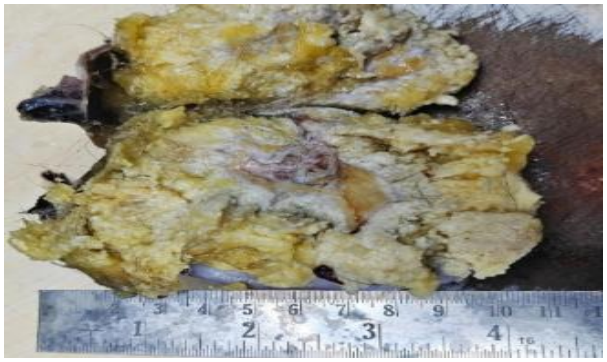

Figure 4: Gross specimen of the excised ovarian dermoid cyst.

Postoperative course

The patient had an uneventful recovery.

She was started on oral fluids on postoperative day 3. She tolerated a soft diet well by postoperative day 5. She was discharged on postoperative day 6 with a healthy wound and was advised regular follow-up.

Histopathology confirmed a mature cystic teratoma with no malignant transformation.

DISCUSSION

Mature cystic teratomas are the most common benign tumours of the ovary. Torsion occurs in 10–15% of cases, but secondary intestinal obstruction is exceedingly rare.[2-4] In this case, the sigmoid colon became entrapped around the twisted ovarian pedicle, causing a closed-loop obstruction, a phenomenon not frequently reported in the literature. Most common etiology of mechanical obstruction of large bowel is colonic volvulus more commonly seen in Russia, India, Middle east, Eastern Europe, Africa where as in United States it is colorectal cancer (CRC). It is thought that one third of large bowel Obstructions are due to volvulus, Sigmoid colon being the commonest site for volvulus. Any portion of colon which is not fixed to the retroperitoneum and that has an elongated mesentery is a potential site for volvulus, wherein axial twisting of colon around mesentery leads to obstruction. It is common in mentally retarded individuals, hypothyroidism, chronic constipation, patients of Parkinson disease, scleroderma, multiple sclerosis, Chagas disease and those on anticholinergic drugs. Predisposing factors include adhesions, overloaded redundant sigmoid colon, long pelvic mesocolon. Closed-loop obstruction occurs when a segment of the bowel is occluded at two points, leading to progressive distension, ischemia, and potential perforation if untreated. In our patient, the entrapment of the sigmoid colon by left ovarian dermoid cyst led to luminal narrowing and obstruction, necessitating surgical intervention.[5-7]

Plain films of abdomen can help in localising the obstruction, demonstrating the degree of distension and help reaching the diagnosis. Contrast enhanced CT abdomen is definitely proving its importance in early and prompt diagnosis. It also provides clues regarding tissue ischemia and impending perforation. Flexible endoscopy can also help in diagnosing as well treatment such as decompression and detorsion of sigmoid volvulus. The treatment for large bowel obstruction is tailored to the etiology of obstruction.[11,14] Whereas for large benign ovarian tumours, ovarian cystectomy is often employed, as this technique is most appropriate for patients in whom retaining fertility is critical. Though cystectomy carries a higher risk of recurrence in borderline tumours of ovary as compared to salpingo-oophorectomy, overall survival is not compromised.[15]

A review of the literature revealed around four cases of sigmoid volvulus associated with ovarian cyst torsion since 1937. Since then, there are no observations associating adnexal torsion on an ovarian cyst with volvulus of the sigmoid colon in adults. In 2010, Al-Rshoud et al reported the case of sigmoid colon volvulus after aspiration of an ovarian cyst without any adnexal torsion.[16]

In our case as sigmoid colon loop and left ovarian dermoid had already undergone ischaemic changes, resection of sigmoid colon and left oophorectomy been performed. Now the question was whether to perform a Hartmann's procedure or to do anastomosis in this case of complicated volvulus as there was no significant difference in mortality post-procedure.[17] Patient was young with good nutritional status and minimal bowel oedema, so decision to perform side to side colo-colic anastomosis was made which resulted in uneventful and excellent post-operative recovery. Patient was healthy and symptoms free in follow-up visits.

Key learning points from this case include: early recognition of ovarian torsion with associated bowel involvement is crucial, as delay can lead to ischemic complications; CECT is the imaging modality of choice, providing valuable details on ovarian pathology and bowel involvement; and timely surgical intervention is essential, with a focus on relieving the obstruction, preserving ovarian function when possible, and performing safe anastomosis in compromised bowel segments.[8,10]

CONCLUSION

This case highlights an extremely rare yet clinically significant complication of ovarian dermoid cysts leading to sigmoid colon entrapment and closed-loop obstruction. A high index of suspicion, timely imaging, and prompt surgical intervention are crucial in managing such cases.

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