

## LAPAROSCOPICALLY TREATED SMALL BOWEL OBSTRUCTION DUE TO INTERNAL HERNIATION THROUGH THE BROAD LIGAMENT

*CHRISTIAN DACESIN VYRDAL, ALAA EL-HUSSUNA*

Gastro Unit, Surgical Department, Copenhagen University Hospital, Hvidovre Hospital  
Kierownik: dr med. *S. Schultze*

The authors reported a case of small bowel obstruction secondary to internal herniation through a defect of the broad ligament. This is a rare cause of small bowel obstruction.

A 42 year-old woman without previous abdominal surgery presented with episodes of abdominal pain, nausea and vomiting. Due to rather unspecific and changing symptoms and the fact that objective findings were normal the patient was discharged and admitted a couple of times before a computed tomography-scan showed small bowel obstruction. Acute diagnostic laparoscopy showed internal herniation of a loop of small bowel trapped in a 2 cm defect in the right side of the broad ligament. The defect was gently expanded bluntly and it was then possible to retract the strangulated part of the small bowel which afterwards was vital. The defect was sutured laparoscopically. The postoperative recovery was uneventful.

This case demonstrates that a preoperative diagnosis is difficult and a high index of suspicion is necessary to prevent diagnostic delay. Internal herniation through a defect in the broad ligament should be considered as a differential diagnosis in female patients presenting with symptoms of small bowel obstruction without a history of prior abdominal surgery, especially in parous women.

**Key words:** internal herniation, small bowel obstruction, ileus, laparoscopy, broad ligament, acute abdomen

In the study authors reported a case of small bowel obstruction secondary to internal herniation through a defect of the broad ligament. This is a rare cause of small bowel obstruction (1, 2, 3), but as this case report shows, it is important to remember in women without previous abdominal surgery presenting with signs of small bowel obstruction.

### CASE REPORT

A 42-year old woman presented to the emergency department with suddenly debuted constant epigastric pain. She was gravida 3, para 2 with a medical history of two natural labors and one prior surgical abortion and was otherwise healthy.

Physical examination, laboratory tests and ultra sound scanning were normal (apart from slight direct tenderness in the epigastrium).

Eight hours after the debut, the pain changed in character to colicky right inguinal pain and was now associated with nausea and vomiting.

Objectively, the abdomen was still soft and flat, but now with tenderness in the right side. Traces of blood were detected in the urine, and nephrolithiasis was suspected. The patient was treated symptomatically and discharged 3 hours later.

The next day the patient was readmitted to the hospital, due to of increasing nausea and vomiting. There had been two defecations of loose stools. Physical examination was normal. Blood investigation showed an elevated white blood cells count of  $14,8 \times 10^9/L$ ,

but was otherwise normal. The symptoms were interpreted as gastroenteritis and the patient was discharged as she felt an improvement.

The next day, the patient was admitted again. A computed tomography scan (CT-scan) without intravenous contrast was performed to exclude nephrolithiasis. This showed dilated bowels but no nephrolithiasis. The physical examination was still normal.

The patient was observed overnight and the symptoms gradually worsened. The patient had no defecation or flatus for 2 days and her abdomen was now mildly distended with diffuse pain on palpation. Small bowel obstruction was suspected and a new CT-scan of the abdomen with intravenous contrast was performed. It showed small bowel obstruction.

An acute laparoscopy showed internal herniation of a loop of small bowel trapped in a 2 cm defect in the right side of the broad ligament. The strangulated part of the bowel was dilated and bluish discoloured while the non-trapped part was healthy. The defect was gently expanded bluntly and it was then possible to retract the strangulated part of the small bowel. The defect was then sutured laparoscopically. Then the entire small bowel was inspected and it was vital.

The postoperative recovery was uneventful and the patient was discharged 3 days later.

## DISCUSSION

In this case there was a delay (rather long delay) in making the diagnosis due to the rather unspecific and changing symptoms at the time of presentation in addition to the fact that the patient was 42 years old and without previous abdominal surgery.

Preoperative diagnosis of internal hernia due to a defect of the broad ligament is known to be difficult because of the absence of typical signs and symptoms (1, 2, 4). This makes a

high index of suspicion necessary. The typical patient with broad ligament hernia is a middle-aged woman who has been pregnant and has no history of abdominal surgery (4).

Computed tomography is useful in identifying small bowel obstruction and can make a preoperative diagnosis of an internal hernia, but identifying a broad ligament defect is difficult (3, 5).

Defects in the broad ligament can be either acquired or congenital (1, 6). Acquired defects can be caused by A) pregnancy and delivery traumas, B) operative traumas, C) endometriosis and D) previous pelvic inflammatory disease (PID). The congenital defects are rare and suspected to be caused by rupture of cystic structures that are remnants of the mesonephric or Müllerian ducts (1, 6). In our case the patient has had two pregnancies with natural deliveries and a previous surgical abortion which makes an acquired defect most likely. In fact 80% of all women with internal herniation through the broad ligament are multiparous (1).

## CONCLUSIONS

In the recent years several cases of laparoscopic treatment of herniation through a defect in the broad ligament has been presented (1, 7-11). As our case also demonstrated laparoscopic treatment is both simple and less traumatic than laparotomy.

This case report shows that a high index of suspicion of herniation through broad ligament is necessary to prevent diagnostic delay.

Internal herniation through a defect in the broad ligament should be considered as a differential diagnosis in female patients presenting with symptoms of small bowel obstruction without a history of prior abdominal surgery, especially in parous women. It is recommended to close a defect of the broad ligament discovered incidentally during surgery to prevent future herniation (6).

## REFERENCES

1. Leone V, Misuri D, Faggi U et al.: Laparoscopic treatment of incarcerated hernia through right broad ligament in patients with bilateral parametrium defects. *G Chir* 2009; 30(4): 141-43.
2. Nozoe T, Anai H: Incarceration of small bowel herniation through a defect of the broad ligament of the uterus: report of a case. *Surg Today* 2002; 32(9): 834-35.

3. Langan RC, Holzman K, Coblenz M: Strangulated hernia through a defect in the broad ligament: a sheep in wolf's clothing. *Hernia* 2012; 16(4): 481-83.
4. Kosaka N, Uematsu H, Kimura H et al.: Utility of multi-detector CT for pre-operative diagnosis of internal hernia through a defect in the broad ligament. *Eur Radiol* 2007; 17(4): 1130-33.
5. Varela GG, López-Loredo A, García León JF: Broad ligament hernia-associated bowel obstruction. *JSLs* 2007; 11(1): 127-30.
6. Demir H, Scoccia B: Internal herniation of adnexa through a defect of the broad ligament: case report and literature review. *J Minim Invasive Gynecol* 2010; 17(1): 110-12.
7. Bangari R, Uchil D: Laparoscopic management of internal hernia of small intestine through a broad ligament defect. *J Minim Invasive Gynecol* 2012; 19(1): 122-24.
8. Agresta F, Michelet I, Candiotta E, Bedin N: Incarcerated internal hernia of the small intestine through a breach of the broad ligament: two cases and a literature review. *JSLs* 2007; 11(2): 255-57.
9. Garcia-Oria M, Inglada J, Domingo J et al.: Small bowel obstruction due to broad ligament hernia successfully treated by laparoscopy. *J Laparoendosc Adv Surg Tech A* 2007; 17(5): 666-68.
10. Takayama S, Hirokawa T, Sakamoto M et al.: Laparoscopic management of small bowel incarceration caused by a broad ligament defect: report of a case. *Surg Today* 2007; 37(5): 437-39.
11. Guillem P, Cordonnier C, Bounoua F et al.: Small bowel incarceration in a broad ligament defect. *Surg Endosc* 2003; 17(1): 161-62.

Received: 7.11.2013 r.

Address correspondence: DK-2650 Hvidovre, Kettegårds Alle 30

e-mail: cvy@dadlnet.dk