



## Acute small bowel obstruction due to ileal endometriosis: a case report and review of the most recent literature

### Akutna opstrukcija tankog creva izazvana endometriozom ileuma: prikaz bolesnice i pregled najnovije literature

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#### Abstract

**Introduction.** Endometriosis is defined as the presence of benign endometrial glands and stroma outside the normal anatomical location. Endometriosis of the small bowel, especially symptomatic small bowel involvement, is very unusual. **Case report.** We presented a 45-year-old woman with acute intestinal obstruction due to ileal endometriosis. The patient complained of severe abdominal pain, nausea and vomiting. Immediate laparotomy was carried out. Above the ileocecal valve there was an ulcerated, edematous and fragile segmental lesion that caused intestinal obstruction. Histology of this ileal segment revealed endometriosis and an annular stricture that again showed foci of endometriosis. **Conclusion.** In reproductive-age women with the symptoms of intestinal obstruction, intestinal endometriosis should be kept in mind.

#### Key words:

ileum; intestinal obstruction; endometriosis; abdomen, acute; diagnosis; surgical procedures, operative; treatment outcome.

#### Apstrakt

**Uvod.** Endetrijoza je prisustvo benignih endometrijskih žlezda i strome van normalne anatomske lokacije. Endetrijoza tankog creva, posebno simptomatsko uklještenje tankog creva, veoma je retko. **Prikaz bolesnika.** Prikazali smo 45-godišnju bolesnicu sa akutnom opstrukcijom tankog creva usled ilealne endetrijoze. Bolesnica je primljena sa tegobama – jakim bolom u trbuhu, mučninom i povraćanjem. Urađena je hitna laparotomija. Iznad ileocekalne valvule utvrđeno je postojanje ulcerisane, edematozne i fragilne lezije koja je izazvala opstrukciju creva. Histološkim pregledom segmenta ileuma otkrivena je endetrijoza i anularno suženje u kojem su opet utvrđena žarišta endetrijoze. **Zaključak.** Kod žena u reproduktivnom dobu koje imaju simptome opstrukcije creva treba imati na umu mogućnost intestinalne endetrijoze.

#### Ključne reči:

ileum; creva, opstrukcija; endetrijoza; abdomen, akutni; dijagnoza; hirurgija, operativne procedure; lečenje, ishod.

#### Introduction

Endometriosis is defined as the presence of benign endometrial glands and stroma outside the normal anatomical location. It is a painful chronic disease occurring in 5%–15% of menstruating women<sup>1</sup>. Endometriosis can be divided into intra- and extraperitoneal sites. In decreasing order of frequency, intraperitoneal locations are ovaries (30%), uterosacral and large ligaments (18%–24%), fallopian tubes (20%), pelvic peritoneum, pouch of Douglas, and gastrointestinal (GI) tract. Extraperitoneal locations include cervical portio (0.5%), vagina and rectovaginal septum, round ligament and inguinal hernia sac (0.3%–0.6%), navel (1%), abdominal scars after gynaecological surgery (1.5%) and caesarian section (0.5%). Endometriosis

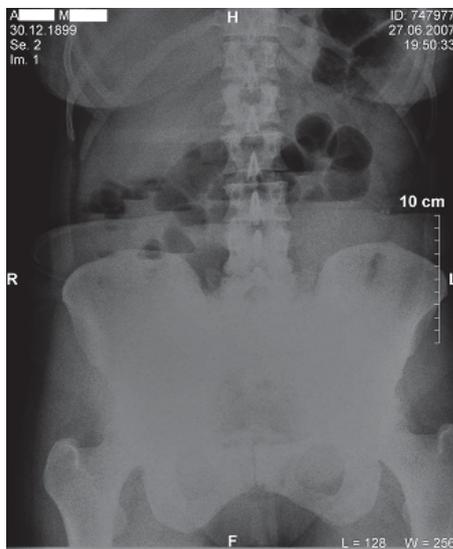
rarely affects extraabdominal organs such as the lungs, urinary system, skin and the central nervous system<sup>2</sup>.

While endometriosis in the gastrointestinal tract is relatively common (3%–37%), it is most often encountered in the rectum and sigmoid colon<sup>3</sup>. On the other hand, endometriosis of the small bowel, especially symptomatic small bowel involvement, is very unusual. A clinical picture of obstruction may be caused by stenosis or kinking as a result of adhesions or fibrosis, while intestinal intussusception and volvulus have also been described<sup>4</sup>.

Severe acute abdomen due to small bowel involvement is a rare phenomenon. In this paper, we presented a case of acute intestinal obstruction due to ileal endometriosis, in a 45-year-old multiparous woman.

### Case report

A 45-year-old multiparous woman presented with severe abdominal pain, nausea and vomiting for last past four days. Her last menstrual period was normal and began 8 days ago. She was a non-smoker, non-alcoholic. There was no family history of bowel cancer or inflammatory bowel disease. On physical examination, the patient appeared uncomfortable. The patient was hemodynamically stable. Rectal examination was normal. The abdomen was distended and on palpation there was general and rebound tenderness. Bimanual pelvic examination revealed left adnexal tenderness. The leukocyte count was  $16,000/\text{mm}^3$  and urinary pregnancy test was negative. Plain abdominal radiograph revealed bowel obstruction showing dilated loops with different air-fluid levels (Figure 1). Sonography revealed thickened, aperistaltic and distended loops of the small bowel. Also, the uterus was normal and both ovaries had multiple follicles.

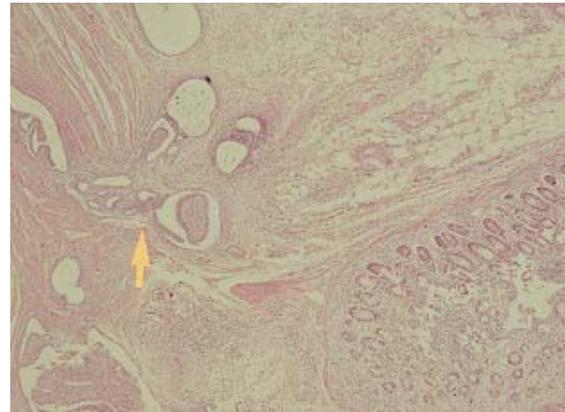


**Fig. 1 – Preoperative plain abdominal radiography**

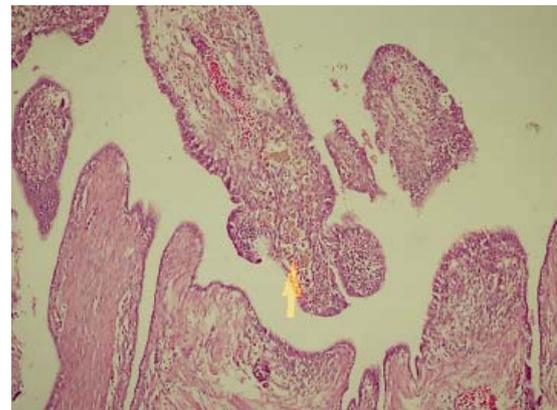
The patient was hospitalized in the 4th Surgery Clinic, Izmir (Turkey), and an emergency laparotomy was performed with the diagnosis of complicated acute abdomen. The appendix was normal, but there was a tumoral mass of 5 cm above the ileocecal valve. Loops of ileum and jejunum, which were dilated, were seen proximal of the lesion. Bilateral ovaries were attached to the uterus and a left hydrosalpinx was revealed. There were follicle like lesions at the bilateral ovaries ranged between 3.0–3.5 centimeters in diameter. There was no any other intraabdominal lesion. Right hemicolectomy and ileotransverostomy were carried out for the tumoral mass causing intestinal obstruction. There was no any informed consent form for total abdominal hysterectomy with bilateral salpingo-oophorectomy. Left total salpingectomy was carried out for hydrosalpinx. Ovarian cysts were drained.

An ulcerated, oedematous and fragile segmental lesion was seen 5 cm above the ileocecal valve causing annular

stricture on macroscopic postoperative examination. The histopathological examination of this ileal segment revealed endometriotic implants (Figure 2). The resected specimen consisted of endometrial gland and stroma, especially in the *muscularis propria* and the submucosa. Cytological examination of cyst contents revealed hemosiderin-laden macrophages. Also, hemosiderin-laden macrophages were detected in the tubal mucosa (Figure 3). These findings confirmed endometriosis.



**Fig. 2 – The focuses which consisted of endometrial gland and stroma in the ileal wall (HE,  $\times 60$ )**



**Fig. 3 – Hemosiderine-loaded macrophages in the tubal mucosa (HE,  $\times 60$ )**

The patient's postoperative course was uneventful, and she was discharged on the sixth day after the surgery. Also, the patient had gonadotropin-releasing hormone (GnRh) suppression therapy with leuprolide acetate for 12 months. The patient was disease-free for 36 months since operative treatment with normal ultrasonographic findings and Ca-125 levels within normal limits.

### Discussion

Endometriosis is a common disease of unknown etiology. Many theories have been proposed to explain this condition. The most widely accepted is Sampson's retrograde menstruation theory: during menstruation, endometrial tissue

refluxes through the fallopian tubes, implanting and growing on the serosal surface of abdominal and pelvic organs. Coelomic metaplasia, lymphatic and/or vascular spread of vital endometrial tissues should be also taken into consideration<sup>5</sup>. Activated macrophages and lymphocytes can exist in endometriotic implants. The role of cytokines and growth factors in the pathophysiology of endometriosis has been investigated extensively in the past decade. The existence of cytokines and growth factors are also explain the ability of neo-vascularisation, pseudoinvasion and infiltration of endometrial implants<sup>6</sup>.

Intestinal endometriosis consists of 7%–37% of all endometriosis cases<sup>3</sup>. In intestinal endometriosis the endometriotic involvement is in the recto-sigmoid colon, cecum, and appendix, 86%, 4% and, 3% respectively. Small bowel involvement is only 7%. Small bowel involvement is less than 1% in all patients with endometriosis<sup>6,7</sup>.

Ileal endometriosis usually involves terminal ileum. Similar to our case, the endometriotic implants usually locate within 10 cm nearby the ileocecal valve<sup>8</sup>. This involvement may be the result of more retrograde menstrual flow towards the terminal ileum than other intestinal loops. There is a close relationship between terminal ileum and left fimbrial ending anatomically.

The symptomatology of intestinal endometriosis often characterized by nonspecific abdominal symptoms such as chronic abdominal pain, sometimes in relation to the menstrual cycle, and intestinal disorders. Dysmenorrhea, dyspareunia and infertility may occur in up to 50% of patients<sup>9</sup>. Constipation is seen in the distal colonic lesions. Diarrhea, nausea and vomiting are the cardinal symptoms in small intestinal lesions. Symptoms are usually cyclic. If the disease progresses, patients may complain persistently<sup>10</sup>. Intestinal endometriosis may mimic common gastrointestinal diseases such as appendicitis, diverticulitis, irritable bowel syndrome, intraabdominal adhesions, acute cholecystitis or Chron's dis-

Preoperative confirmation of intestinal endometriosis is uncommon. Kaufman et al.<sup>12</sup> showed that colonoscopy with biopsy confirmed the diagnosis in 29.6% of patients tested and only 15% of patients with intestinal endometriosis had histologic lesions involving mucosa. In five patients who underwent endoscopic ultrasound, the diagnosis of intestinal endometriosis was established in all cases (n = 4) where histology or cytology was obtained. Malignancy was considered nearly as frequently as intestinal endometriosis preoperatively, and 90.4% of patients underwent laparotomy as the initial surgical approach<sup>12</sup>. Also Li Destri G et al.<sup>9</sup> claim that the diagnosis of intestinal endometriosis is very difficult and can be made by radiological methods (computed tomography or magnetic resonance imaging) or by endoscopic ultrasound only for the rectal localization. On the other hand, the diagnosis often nowadays is due to laparoscopic techniques.

Medical management of intestinal endometriosis is currently speculative; expectant management should be carefully balanced with the severity of symptoms and the feasibility of prolonged follow-up. Several studies demonstrated an improvement in quality of life after extensive surgical excision of the disease. Bowel endometriotic nodules can be removed by various techniques: mucosal skinning, nodulectomy, full thickness disc resection, and segmental resection. Although indications for colorectal resection are controversial, recent data suggest that aggressive surgery improves symptoms and quality of life<sup>13</sup>. But the treatment of acute small bowel obstructions due to ileal endometriosis should be segmental resection, as we carried out. End-to-end anastomosis may be done in patients with acute small bowel obstructions. Although the residual disease and the other endometriotic foci must be treated at the postoperative period too, for preventing a new advanced stage disease.

In Table 1 the presentation and first line treatment of recently reported cases of acute intestinal obstruction caused by endometriosis are given.

**Table 1**  
**The presentation, and treatment of some of recently reported cases of acute intestinal obstruction due to endometriosis**

Author (year)	Presentation	First line treatment
Wickramasekera et al. (1999) <sup>14</sup>	distal ileum	segmental resection
Grodziński et al. (2003) <sup>15</sup>	ileocecal valve	right hemicolectomy
Ridha et al. (2003) <sup>16</sup>	terminal ileum	segmental resection
Beltrán et al. (2006) <sup>17</sup>	terminal ileum	segmental resection
Vanrell Garau et al. (2007) <sup>18</sup>	terminal ileum	right hemicolectomy
Preziosi et al. (2007) <sup>19</sup>	ileocaecal junction and rectum	hemicolectomy
De Ceglie et al. (2008) <sup>20</sup>	ileum	right hemicolectomy
Kalu et al. (2008) <sup>21</sup>	ileocecal valve	laparoscopic colectomy
Ruiz et al. (2008) <sup>22</sup>	ileocecal valve	segmental resection
Chaâbouni et al. (2009) <sup>23</sup>	ileum	partial resection
Alatise et al. (2010) <sup>24</sup>	adhesive ileal obstruction	intestinal resection
Slesser et al. (2010) <sup>25</sup>	appendix and ileocaecal junction	right hemicolectomy

ease, and also gastrointestinal/gynecologic malignancies. Also, diffuse serosal/peritoneal involvement may results in carcinomatosis-like condition by causing exudative ascites and hemoperitoneum<sup>11</sup>.

Regression and atrophy of endometrial glands is the aim of therapy. Danazol and GnRH analogs cause regression of endometriotic implants by inhibiting luteinizing hormone/follicle-stimulating hormone secretion and ovulation. It is shown that

these medications are effective for inhibiting symptomatic regression and recurrence of intestinal endometriosis<sup>26</sup>.

### Conclusion

Clinical findings and diagnostic tools are defective for preoperative diagnosis of intestinal endometriosis

causing acute abdomen. The physician must carefully examine the presence of premenstrual pain, dysmenorrhea, dyspareunia or other common symptoms of endometriosis in reproductive-age women with the intestinal obstruction symptoms. Careful preoperative evaluation of these patients is very important for providing the most convenient surgical therapy.

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