Peritoneal hernia following abdominal hysterectomy: A case report

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**ABSTRACT**

**Background:** Internal hernias rarely lead to bowel obstruction; they are caused by a natural or unnatural opening within the peritoneal cavity. Defects in the peritoneum are extremely rare. Patients present with features of intestinal obstruction and most cases are diagnosed during surgery.

**Case Presentation:** A 47-year-old woman with a history of multiple abdominal surgeries had a small bowel hernia through a peritoneal defect of the anterior abdominal wall. She presented with abdominal pain and distension and was taken to the operating room, where findings revealed an intact fascia and small bowel herniation through a midline peritoneal defect.

**Conclusion:** Herniation of small bowel through the peritoneum is a rare type of internal hernia that can manifest in a patient with extensive history of abdominal surgeries. This type of clinical picture warrants a high degree of suspicion for prompt and proper management. Surgery should not be delayed, to avoid increased morbidity and mortality.

**ARTICLE INFO**

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- Peritoneal defect
- Maylard incision
- Case report

**1. Introduction**

An incisional hernia refers to an abdominal wall hernia at the site of a previous surgical incision. It can present as a definite hernia, with all the hernia components of the defect, sac, and content, or as a weakness of the fascial wall, with shallow sac and occasional bulge of content. While this complication occurs in 5–10% of patients after abdominal surgery, with only 1% of those cases causing obstruction [1,2], most hernias occur through the fascia, and peritoneal hernias are not ordinarily reported [3]. Prior cases of peritoneal hernia have involved congenital defects, herniation through the peritoneal defect of the pouch of Douglas, and peritoneal pocket hernias after laparoscopic ventral herniorrhaphy [4,5,6].

Peritoneal closure has long been a debated topic. Advantages of peritoneal closure include reducing the risk of infection and wound herniation in addition to approximation of tissues for healing [8]. While prior studies found that peritoneum closure decreases the risk of adhesion [8], recent studies have shown that peritoneal closure has no benefit in relation to the formation of intra-peritoneal adhesion [9]. In addition, because closure increases postoperative pain and increases operating time without changing short-term morbidity, several studies have deemed peritoneal closure not necessary [8–13]. No systematic review has been conducted to study whether the peritoneum should be closed or left open after non-obstetric operations involving laparotomy and there is currently no consensus about the method of closure of the peritoneum (continuous suture versus interrupted suture) [14]. Ultimately, the decision to close the peritoneum after laparotomy has become a decision made by the surgeon based on his or her preference.

**2. Case Presentation**

A 47-year-old woman, gravida 1 with spontaneous abortion, presented to the emergency department with pain, abdominal distention, and lack of flatus or bowel movement on day 4 after total abdominal hysterectomy of an 18-week-sized leiomyomatous uterus. Her history was notable for menorrhagia of 15 years, a diagnostic laparoscopy, two abdominal myomectomies, a laparoscopic left ovarian cystectomy, and a hysteroscopic myomectomy.

Regarding her surgery, initial entry was made via Pfannenstiel incision but to improve surgical exposure and delivery of the enlarged uterus, a Maylard incision was performed. After hysterectomy, the peritoneum and subsequently the fascia were closed in a running fashion with 0-Vicryl suture. She met all post-operative milestones and was discharged in stable condition on the second post-operative day.

On re-presentation, her vital signs were unremarkable. She looked visibly uncomfortable and complained of significant “gas” pain.

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Examination revealed a soft, mildly tender, distended abdomen with hypoactive bowel sounds and voluntary guarding. The abdominal skin incision site was clean, dry, and intact. Pelvic exam revealed that the vaginal cuff was also intact.

CT imaging was ordered and revealed a small segment of small bowel herniating through the peritoneum but still contained by the fascia (Fig. 1), after which the patient was scheduled for an exploratory laparotomy.

Upon entry through previous abdominal incision, the fascia was found to be intact, with no eversion of bowel. However, when the fascia was re-opened, the small bowel was seen protruding through a 2 × 2 cm midline defect of the peritoneum. The bowel was healthy, without any sign of injury or strangulation, and was easily reduced into the peritoneal cavity. The decision was then made to open the peritoneum and ultimately close the fascial layer only, in a running fashion with 0-Vicryl suture. Postoperatively, the patient experienced a return of bowel function and was subsequently discharged home in stable condition.

3. Discussion

Hernias occur when the bowel or peritoneum protrudes through the abdominal wall. While most incisional hernias protrude through the fascia, the patient’s peritoneal incisional hernia is extremely rare [3]. While a prior case of herniation through a peritoneal defect of the pouch of Douglas has been reported postoperatively, most internal hernias are a result of congenital defects [6]. Risk factors include prior laparotomy, recurrent incision intraoperatively, and poor surgical and disturbed wound healing [2]. Protective factors included nonabsorbable sutures and the use of a transverse incision [7].

The Maylard incision, used in this case, is a transverse incision indicated during hysterectomy when additional exposure of the abdominal, pelvic, and retroperitoneal cavities is required [15,16,17]. It is associated with a low rate of hernia formation and low rate of mortality, and, ordinarily, the peritoneum is not closed with this surgical approach [18]. The use of knots and sutures during peritoneal closure in transabdominal preperitoneal laparoscopic hernia repair has been rarely mentioned [19]. The extensive history of abdominal surgeries may have contributed to the peritoneal herniation. It is also proposed that another contributing factor to the formation of the patient’s hernia was the “conversion” of her original Pfannenstiel incision to the Maylard incision, as the Maylard incision is performed higher up on the abdominal wall and does not involve fascial dissection from the rectus abdominis muscles.

This case report documents a rare occurrence of peritoneal hernia after total abdominal hysterectomy, during which a Maylard incision along with peritoneal closure were employed. Surgeons must take care to thoroughly inspect peritoneal and/or fascial closures. While peritoneal closure may have contributed to her hernia formation, it is important to not discount her extensive history of abdominal surgeries as a key contributor. Thus, even though hernia through a peritoneal defect with intact fascia is an extremely uncommon type of internal hernia and its preoperative diagnosis is difficult, a high degree of suspicion based on CT findings and history of abdominal surgery may be necessary for prompt management.

Contributors

Caroline S. Kwon participated in the direct care of the patient and was involved in the conception of the case report, drafting the article, making the figures, and incorporating critical edits.

Jennifer Dai was involved in performing background research for the article and crafting the discussion.

Mark V. Sauer assisted with all critical edits, particularly related to the discussion points and important intellectual content to learn from this case.

All authors approved of the final article.

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Patient consent

Obtained.

Provenance and peer review

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Conflict of interest statement

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Fig. 1. CT scan of the abdomen showing a midline peritoneal hernia (arrow). Note the presence of bowel loops in the hernia sac extending to but contained within fascial surface.
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