

Strangulated small-bowel loop herniation at the 5 mm trocar entry site after laparoscopic ovarian cyst excision operation

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ABSTRACT

To draw attention to the clinical approach in terms of early diagnosis in the trocar entry site hernias which are rare complications after laparoscopic operations. A 47 years old female patient was admitted to our clinic with complaint of ongoing pelvic pain and the patient was scheduled for laparoscopic cystectomy. On the 13th day postoperatively, the patient was referred to our clinic again with ileus clinic. In the CT scan, incarcerated intestinal herniation was detected at the 5 mm trocar entry site. As the trocar site hernias can occur even in incisions smaller than 10 mm, early diagnosis and treatment is of vital importance.

Keywords: Trocar site hernia, laparoscopy, complications, ileus, incisional hernia.

Laparoscopy is accepted as a gold standard method in gynecological surgery and it is a multifaceted treatment that includes tubal ligation, ovarian or adnexal cyst excision, ectopic pregnancy treatment, hemorrhagic cyst rupture, chronic pelvic pain diagnosis, sterility, endometriosis treatment, fibromyoma excision, hysterectomy, pelvic organ prolapse therapy, urinary incontinence and even gynecological cancers¹. Compared with open surgical methods, laparoscopic approach is widely preferred treatment modality because of better postoperative outcomes in terms of less pain, faster healing process and lower risk of incisional hernia^{2, 3}. However, the risk of incisional herniation following laparoscopic surgery (trocar site herniation) has been known since 1960s⁴.

Rarely, laparoscopic surgery can lead to complications

related to structures such as vascular structures, bowel loops, bladder or peripheral nerves⁵. Incisional hernias or trocar site hernias are rare complications that develop after laparoscopic surgery, with an estimated incidence ranging from 1% to 6%⁶⁻⁸. Trocar site hernias most frequently develop from incisions greater than 10 mm and reported after gynecological operations in literature⁹. However, in incisions below 10 mm (particularly in 5 mm incisions), trocar site hernias were reported less frequently¹⁰.

In our study, we wanted to report a rare case of bowel loop herniation at the trocar entrance site in a female patient who was admitted to our polyclinic due to nausea, vomiting, constipation and flatulence at the postoperative 13th day after laparoscopic ovarian cyst excision operation.

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Case report

A 47 years old primigravid, primiparous female patient was admitted to our clinic with complaint of ongoing pelvic pain for 6 months. The patient use to take 5 mg ramipril regularly due to primary hypertension and there is no other known chronic disease but the patient reported that she frequently has complaints related to constipation. Additionally, the patient has a history of inguinal hernia and ceserean section operation in 2008 and 2009 respectively. The transvaginal ultrasound revealed a multilocular cystic mass 64x56 mm in size having papillary protrusions and a solid component showing vascularization within it in the right adnexal region. The patient was scheduled for laparoscopic cystectomy. During operation, we inserted a 10 mm trocar from umbilicus, two 5 mm trocar from 3 cm medially from anterior superior iliac spines bilaterally and an another 10 mm trocar from ipsilaterally same line with 5 mm trocar entry site at the right side. During the laparoscopic operation, malignant serous ovarian cancer was detected in the frozen specimen taken from the right oophorectomy material. The operation was converted to an open surgical operation with an epigastric and hypogastric median incision and the patient underwent total abdominal hysterectomy, right salpingectomy, left salpingoophorectomy operation with bilateral iliac, obturator and



Figure 1: Air-fluid levels in plain abdominal X-Ray

paraortic lymph nodule dissection. The operation was completed without any complications. The patient was hospitalized until the fourth postoperative day. In this

course, hemogram, biochemistry values and clinical findings of the patient were regularly checked and wound control was provided. Because vital signs of the patient was stable and there was no additional complaints during hospitalisation, the patient was discharged on the fourth postoperative day in a medically good condition. We recommended outpatient control to the patient one week after discharge. The patient applied to our clinic on the postoperative day 13 (9 days after discharge) with complaints of nausea, vomiting, constipation and flatulence. On the physical examination there wasn't any pathological finding. With taking the patient's complaints into account, we performed an abdominal X-Ray to the patient because of the suspicion of ileus (Figure 1).

Abdominal CT scan was performed to the patient after the appearance of air-fluid levels in the graph. In the scan,



Figure 2: Jejunum bowel loop herniation under the skin from a defect of approximately 3 cm at the level of the 5 mm trocar entry site in abdominal CT imaging with contrast (arrow).

jejunum bowel loop herniation under the skin was detected from a defect of approximately 3 cm at the level of the 5 mm trocar entry site at a distance of 5.5 cm from the left lateral side of the umbilicus (Figure 2).

There was symptoms of intestinal obstruction and the patient was diagnosed with strangulated hernia, the oral intake of the patient was stopped, and the patient was taken into the surgery in emergency conditions. In operation, a 5-7 cm intestinal segment was herniated into the left trocar entry site. There was necrotic herniated loop with a perforation of approximately 1 cm in length. Resection was done for approximately 10 cm of the

necrotic intestine and bowel loops were anastomosed side by side. After hemostasis was achieved, a drain was inserted into the abdomen and the operation was completed. The general condition of the patient was good and she was stable postoperatively. Gas passing and defecation of the patient was confirmed starting from day 2 and the patient was discharged on the 8th day postoperatively.

Discussion

Although trocar entry site herniation is not a common complication, it is a life threatening condition when it occurs and when the diagnosis is delayed. Surgical approaches and patient-related comorbid conditions are considered as risk factors for the development of trocar site herniation (TH)¹¹. In an analysis, Helgstrand et al showed that the overall incidence of TH was below 1%.¹¹

The development of TH often occurs early in the post-operative period, especially in the first 30 days, and usually requires urgent surgical interventions.¹² In a study, 16% of TH repair operations were performed under emergency conditions and this ratio was found to be higher than the operation rate in emergency conditions after laparotomy operations (10.5%).¹³ This shows that the width of the incision line may be inversely proportional to the likelihood of developing complicated hernias. It has been reported that TH is more frequent in 10 mm trocar entries than 5 mm. Thus, in a recent review, it was found that 96% of THs originate from 10 mm trocar entries and only 4% develop due to 5 mm trocars.¹¹

In the development of TH causes that increase abdominal pressure, especially obesity, and other causes such as malnutrition, anemia, sepsis are also accused.¹⁴ The fact that the case we want to report has a BMI value higher than 30 and the fact that chronic constipation story is compatible with the accused factors. In addition, the patient's previous history of umbilical hernia suggests that there may be underlying and undetected facial defects and abdominal wall weaknesses, and that it may increase the likelihood of developing TH. There is a need for further and broader study in this regard.

Conclusion

Although the clinical course can be variable, in most cases after an insidious progression, the patient could refer to an hospital with an acute abdomen clinic as in our case. In this sense, clinicians should make the necessary

imaging and laboratory analyzes, especially X-ray and CT, without delaying the differential diagnosis in view of possible postoperative complications in patients with similar risk factors and should apply early treatment options for highest benefit for the patients.

Conflict of interest: None. **Disclaimer:** Nil.

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