

Early Postoperative Surprise: Bowel Obstruction from Trocar Site Hernia on Day 3

Hamada Abdelilah^{1*}, Bourouail Othmane¹, Bahi Achraf¹, Moujahid Badr¹, El Brahmi Yasser¹, Mohammed Elfahssi¹, Ait Ali Abdelmounaim¹

¹Department of Visceral Surgery, HMIMV, Rabat, Morocco

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*Corresponding author: Hamada Abdelilah

Department of Visceral Surgery, HMIMV, Rabat, Morocco

Abstract

Case Report

Trocar site hernia is a rare but potentially serious complication following laparoscopic surgery. We report the case of a 76-year-old female with a medical history of ischemic stroke (2023) with full recovery and atrial fibrillation under anticoagulant therapy for two years. She underwent a bilateral adnexectomy via laparoscopy for an ovarian mass. On postoperative day 3 (J03), she developed acute bowel obstruction due to a supraumbilical trocar site hernia. This case highlights the importance of early recognition and management of trocar site hernias to prevent life-threatening complications.

Keywords: Laparoscopic surgery complication, Trocar site hernia, bowel obstruction, early postoperative occlusion.

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INTRODUCTION

Trocar site hernia (TSH) is a rare but potentially serious complication following laparoscopic surgery. It typically occurs at the site of trocar insertion, especially when the trocar diameter exceeds 10 mm. The incidence of TSH ranges from 0.0002% to 6%, with a higher prevalence in obese patients and those undergoing procedures involving larger trocar sizes [1].

In elderly patients, particularly those with multiple comorbidities, the risk of TSH may be elevated. The presentation can be subtle, with symptoms such as abdominal pain, nausea, and vomiting, which may be mistaken for other postoperative complications. Delayed diagnosis can lead to severe outcomes, including bowel obstruction and strangulation [2].

Laparoscopic procedures, such as adnexectomy, are commonly performed for various gynecological conditions due to their minimally invasive nature. However, the risk of TSH remains a concern, necessitating vigilant postoperative monitoring. Early recognition and prompt surgical intervention are crucial to prevent life-threatening complications associated with TSH [3].

This case report discusses a 76-year-old female patient who developed a bowel obstruction due to a supraumbilical TSH on postoperative day 3 following a laparoscopic bilateral adnexectomy. The report underscores the importance of considering TSH in the differential diagnosis of postoperative bowel obstruction, especially in elderly patients with comorbidities.

CASE PRESENTATION

A 76-year-old female patient with a medical history significant for ischemic stroke (2023), with full recovery, and atrial fibrillation (AF) under anticoagulant therapy for the past two years, was admitted for elective laparoscopic bilateral adnexectomy due to a symptomatic ovarian mass. Her past medical history also included mild hypertension, but she was otherwise well-controlled with her current medications, which included a beta-blocker for AF and an anticoagulant for stroke prevention. The patient had no known allergies, and her family history was unremarkable for any genetic predispositions.

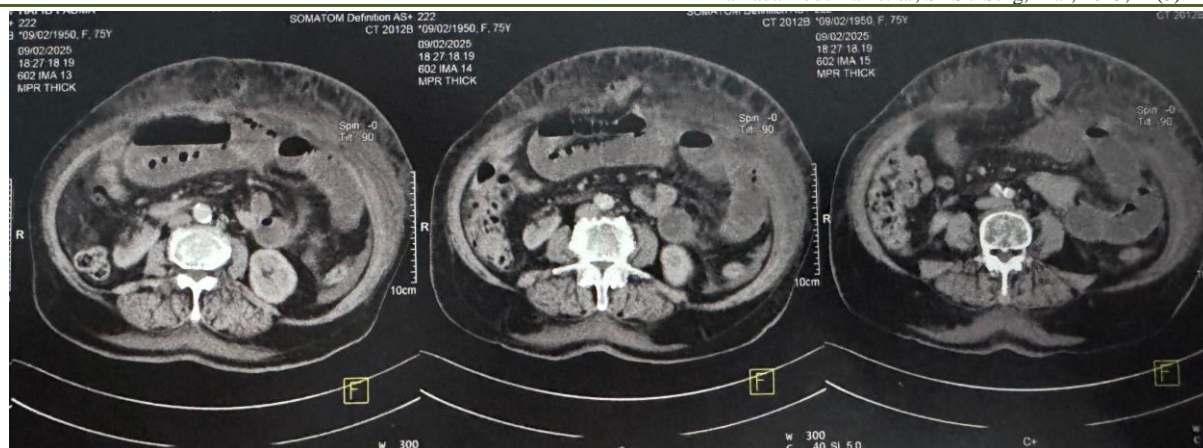


Figure 1: CT Scan of Abdomen Revealing Small Bowel Obstruction Due to Trocar Site Hernia

***Preoperative Assessment:** Prior to surgery, the patient underwent thorough preoperative assessment, which included standard laboratory tests, an electrocardiogram, and imaging studies that confirmed the presence of a bilateral ovarian mass. The patient was assessed by the anesthesiology team, and her anticoagulant therapy was appropriately managed in the perioperative period to minimize bleeding risks. Given the absence of other significant risk factors, she was cleared for surgery.

***Surgical Procedure:** The patient underwent a laparoscopic bilateral adnexectomy, which was performed without immediate complications. The procedure was uneventful, and the patient was closely monitored in the recovery room. The total duration of surgery was approximately 90 minutes, and she received appropriate analgesia for postoperative pain management.

***Postoperative Course:** The first 48 hours post-surgery were uneventful, with the patient maintaining stable vital signs and no signs of infection or bleeding. She was progressing well with oral intake and ambulation. However, on postoperative day 3 (J03), the patient began to experience increasing abdominal distension, along with nausea and intermittent vomiting. These symptoms were initially attributed to normal postoperative ileus, and conservative management was initiated.

Despite this, the patient's symptoms worsened. She developed more pronounced abdominal pain and her vomiting became more frequent. On physical examination, the abdomen was tender, and bowel sounds were significantly reduced. A decision was made to conduct imaging studies to investigate further.

***Diagnostic Workup:** A contrast-enhanced abdominal CT scan was performed, which revealed a supraumbilical trocar site hernia, with a loop of small bowel incarcerated within the hernia sac. The hernia was located at the site of the initial trocar insertion, which was approximately 10 mm in diameter. The findings confirmed that the incarcerated bowel was the cause of the bowel

obstruction, with no evidence of bowel ischemia at that point.

***Management and Surgical Intervention:** Given the patient's clinical status and the radiological findings, she was taken for immediate surgical intervention. The hernia sac was explored, and the incarcerated bowel was gently reduced without signs of strangulation or ischemia. The defect at the trocar site was closed with absorbable sutures, and the abdomen was thoroughly examined to rule out other complications. The patient tolerated the procedure well.

Postoperatively, she was monitored in the surgical ward with close attention to her abdominal status. Over the following 48 hours, her symptoms of abdominal distension and pain gradually improved. She was able to resume a regular diet and was eventually discharged on postoperative day 7 without further complications.

***Follow-up:** At a follow-up appointment 3 weeks after discharge, the patient was doing well. She had no further gastrointestinal symptoms, and her recovery from the laparoscopic surgery was progressing as expected. She was advised to continue with her routine anticoagulation therapy, with careful monitoring due to the recent surgical intervention.

DISCUSSION

Trocar site hernia (TSH) is a rare but potentially serious complication following laparoscopic surgery, with a reported incidence ranging from 0.1% to 3%, though some studies suggest that the rate may be higher depending on factors such as trocar size, patient comorbidities, and the specific surgical procedure performed. The supraumbilical trocar site is most commonly affected, as in our case, due to the relatively larger trocar diameter used during laparoscopic procedures, typically exceeding 10 mm [1]. While the incidence of TSH is low, it is essential for clinicians to be aware of this potential complication, particularly in

elderly patients who may present with atypical or delayed symptoms [4].

-Risk Factors and Pathophysiology: The pathophysiology of TSH involves the protrusion of abdominal contents, such as small or large bowel, through a defect created at the site of trocar insertion. This defect is typically a result of improper closure of the fascia or insufficient suturing at the conclusion of surgery. Various risk factors have been identified, including advanced age, obesity, larger trocar sizes, and the presence of comorbidities such as chronic cough or increased intra-abdominal pressure. Studies have suggested that obesity and the use of large trocars increase the likelihood of developing a TSH, as the abdominal wall may be stretched during surgery, impairing proper closure of the fascia [5].

Elderly patients, such as the 76-year-old in our case, may have a higher risk due to diminished elasticity of the abdominal wall and the presence of other comorbid conditions, such as cardiovascular disease and anticoagulant use. These factors can predispose to wound dehiscence or delayed healing, contributing to the formation of a hernia at the trocar site. The combination of these factors often results in a delayed diagnosis of TSH, as the patient's symptoms may initially mimic those of common postoperative conditions, such as postoperative ileus or transient abdominal discomfort.

-Clinical Presentation and Diagnosis: The clinical presentation of TSH can be subtle, especially in the early postoperative period. In our case, the patient initially presented with nonspecific abdominal symptoms, such as distension, nausea, and vomiting, which are common signs of postoperative ileus. These symptoms can easily be mistaken for normal postoperative recovery and may delay the recognition of the hernia. A critical point is that, unlike typical ileus, a TSH can rapidly progress to bowel obstruction, with possible incarceration or strangulation of bowel loops, which can lead to serious complications, including bowel ischemia and perforation.

The diagnosis of TSH requires a high index of suspicion, particularly when the patient fails to improve as expected postoperatively. Imaging studies, particularly contrast-enhanced CT scans, are the gold standard for diagnosing TSH. In our case, the CT scan confirmed the presence of a supraumbilical trocar site hernia with an incarcerated bowel, and prompt surgical intervention was necessary. The hernia was successfully reduced without signs of ischemia, and the defect was repaired, which is the standard approach for managing TSH [4].

-Management and Surgical Approach: The management of TSH typically involves surgical intervention, which may be either laparoscopic or open, depending on the size of the hernia and the clinical

condition of the patient. Early surgical intervention is essential, as delays can result in complications such as bowel ischemia, perforation, or peritonitis. Several studies have highlighted that the longer the delay in diagnosing and managing a TSH, the higher the risk of morbidity and mortality. Therefore, early detection through imaging and rapid surgical repair is key to minimizing complications [6].

-Prevention: Prevention of TSH involves ensuring proper closure of the fascial layers at the trocar insertion site, particularly when large trocars are used. Surgeons should pay close attention to the technique and ensure that fascial closure is secure, using non-absorbable sutures if necessary, especially for larger trocar sites. In high-risk patients, such as the elderly or those with comorbidities, it may be beneficial to use smaller trocars or opt for alternative methods of trocar insertion that minimize the risk of hernia formation [7].

Additionally, postoperative monitoring is crucial in the early days following laparoscopic surgery. Patients should be assessed for any signs of bowel obstruction or abnormal abdominal symptoms, and imaging should be considered if symptoms do not resolve as expected. In our case, the patient's deterioration in the early postoperative period was a key signal for further investigation and timely intervention [7].

CONCLUSION

Trocar site hernia, though rare, should be considered in the differential diagnosis for any patient presenting with postoperative bowel obstruction, particularly in elderly patients and those with known risk factors. Early diagnosis and prompt surgical intervention are essential for preventing serious complications such as bowel strangulation or perforation. Surgeons must be vigilant in the postoperative period and consider the possibility of TSH, especially in patients with multiple comorbidities, and ensure proper surgical technique to minimize the risk of this complication.

Abbreviations

TSH: Trocar site hernia

REFERENCES

1. Dulskas, A., Lunevičius, R., & Stanaitis, J. (2011). A case report of incisional hernia through a 5 mm lateral port site following laparoscopic cholecystectomy. *Journal of Minimal Access Surgery*, 7(3), 187-189. doi: 10.4103/0972-9941.83512.
2. Alkanhal, H., Alsuhaibani M., & Ali, B. (2022). Richter port site hernia as cause of acute bowel obstruction after laparoscopic gastric bypass: A case report. *Journal of Case Reports and Images in Surgery*, 8(2), 43-46.

3. Ota, K., Katagiri, Y., Katakura, M., Mukai, T., Nakaoka, K., Maemura, T., ... & Morita, M. (2022). Trocar-site hernia following laparoscopic salpingo-oophorectomy in a middle-aged Japanese woman: an initial case report after 40 years of experience at a single center and a brief literature review. *BMC Women's Health*, 22(1), 8. <https://doi.org/10.1186/s12905-021-01528-6>
4. Bhandari, M. (2020). Trocar site hernia after laparoscopic surgeries: a rare but potentially life-threatening complication. *Journal of Clinical Surgery*, 54(3), 139-142.
5. Nofal, M. N., Yousef, A. J., Hamdan, F. F., & Oudat, A. H. (2020). Characteristics of trocar site hernia after laparoscopic cholecystectomy. *Scientific Reports*, 10(1), 2868. Doi: 10.1038/s41598-020-59721-w.
6. Kwon, C. S., Vaseeharan, A., & Sauer, M. V. (2022). Trocar site hernia after laparoscopy: early recognition prevents catastrophic sequelae. *The Journal of Emergency Medicine*, 63(6), 791-794. Doi: 10.1016/j.jemermed.2022.09.006. Epub 2022 Oct 28.
7. De Beaux, A. C., & East, B. (2022). Thoughts on trocar site hernia prevention. A narrative review. *Journal of Abdominal Wall Surgery*, 1, 11034. doi: 10.3389/jaws.2022.11034.