SUNTEXT REVIEWS

SunText Review of Surgery
ISSN: 2766-4767

Open Access
Case Report
Volume 7:1

Case Report: Abdominal Wall Hematoma Following Laparoscopic TAPP Inguinal Hernia Repair

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Received date: 15 October 2026; **Accepted date:** 22 September 2026; **Published date:** 30 October 2026

Citation: Schieppati M (2026) Case Report: Abdominal Wall Hematoma Following Laparoscopic TAPP Inguinal Hernia Repair. SunText Rev Surg 7(1): 147.

DOI: https://doi.org/10.51737/2766-4767.2026.047

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Abstract

Introduction and importance: Transabdominal preperitoneal (TAPP) repair is widely used for inguinal hernia treatment with low complication rates [12]. However, vascular injury may rarely occur and result in significant postoperative bleeding [7].

Case presentation: A 42-year-old female underwent elective bilateral TAPP inguinal hernia repair. In the early postoperative period, she developed abdominal pain, tachycardia, and a significant hemoglobin drop. Contrast-enhanced CT demonstrated a large preperitoneal hematoma with active arterial bleeding. Angiography revealed bleeding from a branch of the inferior epigastric artery, successfully treated with selective embolization [10,11].

Clinical discussion: Postoperative hemorrhage after TAPP is uncommon but requires prompt recognition. Imaging is crucial for diagnosis. Endovascular embolization is a safe and effective alternative to surgical re-exploration in hemodynamically stable patients [10,11].

Conclusion: Early diagnosis and minimally invasive management are key. Embolization represents a valid first-line treatment in selected cases.

Keywords: TAPP; Inguinal hernia; Hematoma; Embolization; Postoperative bleeding; Case report

Introduction

Laparoscopic transabdominal preperitoneal (TAPP) repair is a standard technique for inguinal hernia management, offering reduced postoperative pain and faster recovery compared to open surgery [12]. Complications are uncommon and usually minor; however, vascular injuries can occur and lead to significant hemorrhage [3,7].

This case is reported in accordance with the SCARE 2025 criteria[1].

Presentation of Case

A 42-year-old female presented with bilateral groin swelling and discomfort. Clinical examination confirmed bilateral reducible inguinal hernias. Her medical history was unremarkable, with no prior abdominal surgeries and no use of anticoagulant therapy. Preoperative laboratory tests were within normal limits. The patient underwent elective laparoscopic bilateral TAPP repair under general anesthesia. A standard three-port technique was used (10mm optical trocar 1 cm above the umbilicus and two 5mm trocars in right and left flank). After peritoneal incision to create an ample peritoneal flap, preperitoneal dissection was performed bilaterally dissecting the “hernia box”, medially until the clear view of the Cooper’s ligament and laterally up to the projection of the iliac spine. Hernia sacs were reduced, and polypropylene meshes were placed without any fixation. The peritoneum was closed with a running absorbable barbed suture. No intraoperative complications occurred, and estimated blood loss was minimal. No prophylactic low molecular weight heparin was used in perioperative period. Within 12 hours postoperatively, the patient developed increasing lower abdominal pain associated with

tachycardia. No other major symptoms or signs have been revealed. Laboratory evaluation revealed a drop in hemoglobin from 13.8 g/dL preoperatively to 9.8 g/dL. Physical examination showed abdominal tenderness and mild distension without signs of peritonitis. An urgent contrast-enhanced CT scan demonstrated a large preperitoneal hematoma with active contrast extravasation [7]. The patient remained hemodynamically stable and was referred for interventional radiology. Selective angiography identified active bleeding from a branch of the inferior epigastric artery. Superselective embolization using microcoils was performed, achieving complete hemostasis[10]. Following the procedure, the patient's clinical condition improved progressively. Hemoglobin levels stabilized without the need for blood transfusion. Pain resolved, and no further bleeding was observed. She was discharged on postoperative day 5 in good clinical condition. At 3-month follow-up, the patient was asymptomatic, with no evidence of hernia recurrence or chronic pain, consistent with outcomes reported in the literature [5,6] (Figures 1-3).

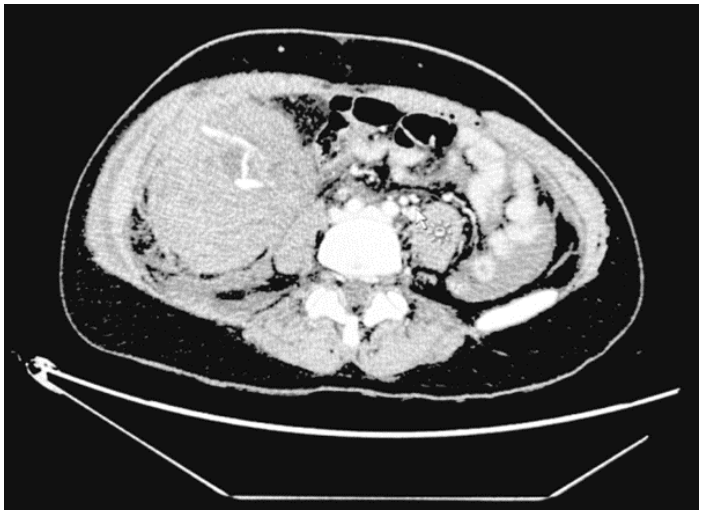


Figure 1: *CT scan image*
The CT scan image shows the hematoma with active bleeding.

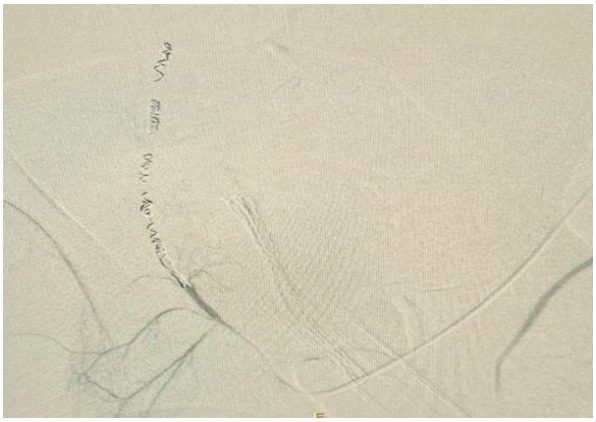


Figure 2: *RX angiography image*
The image shows the released microcoils that stopped the bleeding.

Discussion

TAPP repair is considered safe, but complications such as bleeding may occur due to injury to the inferior epigastric vessels [12]. These injuries may arise during trocar insertion, dissection, or mesh fixation and hematomas may occur even in the absence of anticoagulation or other risk factors. In our case, we had no warning signs or evidence of iatrogenic damage during the surgical procedure. Usually we prefer to use large meshes to avoid the need of any type of mechanical fixations. Postoperative hemorrhage may present with nonspecific signs such as tachycardia, abdominal pain, and a drop in hemoglobin levels. Early CT imaging is essential for prompt diagnosis [7].

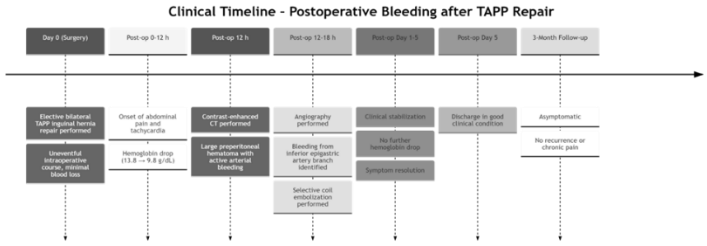


Figure 3: *Clinical timeline of postoperative complication and management.*
Timeline illustrating the sequence of events following bilateral laparoscopic transabdominal preperitoneal (TAPP) inguinal hernia repair in a 42-year-old female patient. The patient developed early postoperative hemorrhage due to injury of a branch of the inferior epigastric artery, diagnosed by contrast-enhanced computed tomography and successfully treated with selective endovascular coil embolization, with full recovery at 3-month follow-up.

In our large experience of TAPP procedures, this was the first case of such an important complication. Traditionally, surgical re-exploration was the standard treatment for postoperative bleeding, infect our first attitude was to prepare for the surgical revision. Only the multidisciplinary approach, after discussion of the clinical case with the interventional radiologist led to a less invasive and effective management. Interventional radiology has become increasingly important in this setting. Selective arterial embolization enables precise localization and control of bleeding while minimizing surgical trauma [10,11]. Recent studies support the role of minimally invasive approaches in managing complications after TAPP repair, showing favorable outcomes and reduced morbidity [4-6].

Conclusion

Postoperative bleeding following TAPP repair is rare but potentially severe. Early recognition and multidisciplinary management are essential. Selective embolization represents a safe and effective treatment option in hemodynamically stable patients. Meticulous attention to abdominal wall vascular anatomy helps prevent this complication.

Ethical approval

Not required.

Consent

Written informed consent was obtained from the patient for publication.

Funding

None.

Author contribution

All authors contributed to study design, data collection, and manuscript preparation.

Conflict of interest

None declared.

Registration of research studies

Not applicable.

Guarantor

The corresponding author.

Provenance and peer review

Not commissioned, externally peer-reviewed.

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