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Case Report

Laparoscopic salvage of fallopian tube herniation following cesarean section drain removal: a case report

Priyanka Kumari^{1*}, Shilpi Nain², Manju Puri²

¹Department of Obstetrics and Gynaecology, ESIC Medical College and Hospital, Alwar, Rajasthan, India

²Department of Obstetrics and Gynaecology, Lady Hardinge Medical College, New Delhi, India

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*Correspondence:

Dr. Priyanka Kumari,

E-mail: mikkilhm2008@gmail.com

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ABSTRACT

Fallopian tube herniation through a surgical drain site is an exceptionally rare postoperative complication. Most historically reported cases have been managed via open relaparotomy and frequently necessitated partial or complete salpingectomy due to tissue ischemia or incarceration. We report a rare case of post-cesarean fallopian tube herniation that was successfully managed via timely laparoscopic reduction, resulting in the complete preservation of tubal viability and future fertility. A 20-year-old primigravida with severe preeclampsia and thrombocytopenia underwent an emergency lower-segment cesarean section for fetal distress. Intraoperatively, diffuse oozing from the operative field prompted the insertion of a pelvic drain. Following drain removal on postoperative day three, a tubular structure was noted protruding through the drain site. Clinical presentation was highly suggestive of fallopian tube prolapse. Diagnostic laparoscopy confirmed the herniation of a congested but viable left fallopian tube through the drain tract, accompanied by adjacent omental traction. The tube was successfully reduced laparoscopically without the need for a relaparotomy or salpingectomy. The patient recovered uneventfully and remained asymptomatic at her follow-up appointments. Fallopian tube herniation through a drain site is a rare, potentially fertility-threatening complication. Early clinical recognition coupled with prompt laparoscopic intervention facilitates the assessment and preservation of tubal viability, circumvents the morbidity of an open relaparotomy, and optimizes patient outcomes.

Keywords: Laparoscopy, Herniation, Fallopian tube, Post-cesarean complication, Drain

INTRODUCTION

The placement of intra-abdominal drains has traditionally been a routine practice following complex surgical procedures involving extensive dissection or potential hemorrhage. However, contemporary evidence suggests that empirical drain placement does not inherently decrease adverse events and may conversely increase healthcare costs and drain-specific complications.¹ Known complications associated with surgical drains include localized infection, hemorrhage, visceral injury, secondary intestinal obstruction, and device malfunction.² Some cases may not have been published for the fear of medico-legal concerns.³ Herniation of intra-abdominal contents through a dedicated drain tract is an uncommon

phenomenon, typically involving the omentum, small bowel, appendix, gallbladder, or ovaries. Fallopian tube herniation through a drain tract is exceedingly rare, with only a handful of cases documented in the medical literature.⁴⁻⁹

The majority of previously reported cases were managed via exploratory laparotomy and often required salpingectomy due to advanced tissue edema, strangulation, or delayed diagnosis. We present a unique case of post-cesarean fallopian tube herniation that was managed entirely via a minimally invasive laparoscopic approach, completely preserving tubal architecture and future reproductive potential.

CASE REPORT

A 20-year-old primigravida at term gestation presented in active labor complaining of acute abdominal pain. Initial laboratory investigations revealed severe preeclampsia complicated by thrombocytopenia, with a platelet count of approximately 60,000 per microliter (reference value 150,000-450,000 per microliter). Following blood pressure stabilization and targeted platelet transfusion, an emergency lower-segment cesarean section was performed under regional anesthesia due to acute fetal distress, resulting in the delivery of a healthy neonate.

Intraoperatively, a small volume of free intraperitoneal fluid was noted. Following closure of the uterine incision, diffuse oozing persisted from the lower uterine segment. In light of the patient's thrombocytopenia and the heightened risk of a postoperative pelvic hematoma, the surgical team elected to place a silicone pelvic drain through a separate stab incision in the left iliac fossa, positioning the tip within the pouch of Douglas.

The immediate postoperative course was unremarkable. The drain output progressively diminished, and the drain was removed on postoperative day three. During extraction, the resident encountered tactile resistance, requiring moderate traction to completely remove the tube.

On postoperative day five, routine inspection of the surgical sites revealed an edematous, tubular structure protruding through the left iliac fossa drain wound. The protrusion visibly increased in prominence during coughing and the Valsalva maneuver. The patient remained hemodynamically stable, febrile, and denied any significant abdominal pain. She exhibited normal bowel function with no clinical signs of intestinal obstruction, localized wound infection, or generalized peritonitis.

Given the distinct tubular morphology and anatomic location, fallopian tube prolapse was highly suspected over differential diagnoses such as prolapsed omentum, loop of bowel, or exuberant granulation tissue. Bedside reduction was briefly attempted but abandoned due to local tissue edema and fragility. Consequently, the patient was scheduled for urgent diagnostic laparoscopy to confirm the diagnosis and plan definitive management.

Intraoperative findings and management

A diagnostic laparoscopy was performed. Intraoperatively, the left fallopian tube was visualized herniating directly into the abdominal wall defect at the previous drain site, causing secondary traction on the adjacent omentum (Figure 1). The herniated segment appeared severely congested but lacked signs of frank necrosis, gangrene, or irreversible ischemic injury. The constricted drain site defect was carefully assessed, and the prolapsed fallopian tube was gently reduced back into the pelvic cavity using laparoscopic atraumatic graspers (Figure 2).

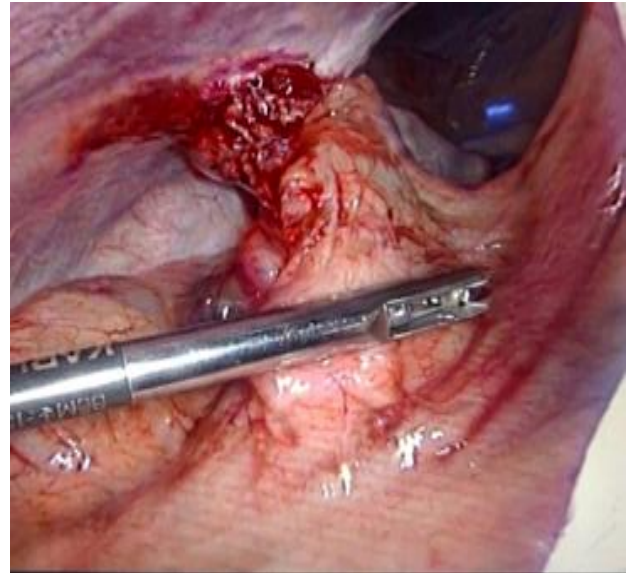


Figure 1: Laparoscopic view demonstrating fallopian tube along with omentum herniating into drain site abdominal wall defect.

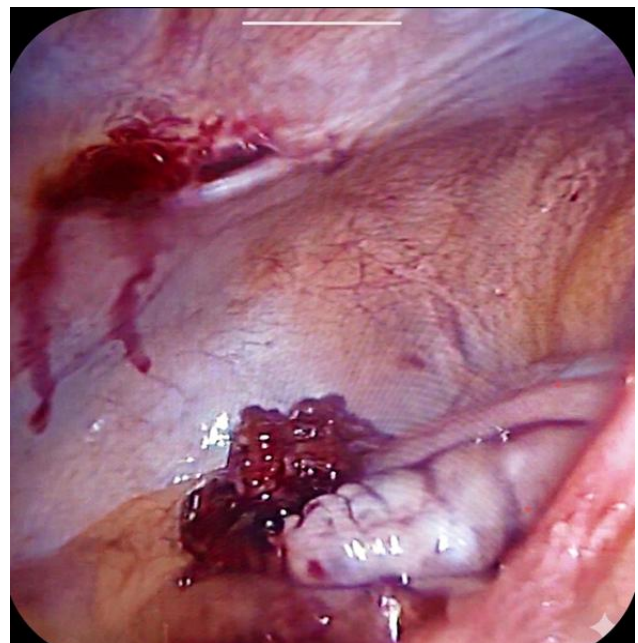


Figure 2: Laparoscopic view of fallopian tube and abdominal wall drain site defect following herniation reduction.

Following successful reduction and release of the physical constriction, the fallopian tube rapidly regained its normal color and vascularity, confirming tissue viability. No salpingectomy, bowel resection, or fascial reinforcement was required.

Postoperative outcome

The patient's postoperative recovery was uneventful. She resumed oral intake and early ambulation on postoperative

day one and was discharged in stable condition on postoperative day nine. At her one-month follow-up appointment, she was completely asymptomatic, the drain site wound had healed perfectly, and there was no clinical evidence of a recurrent hernia.

DISCUSSION

The routine utilization of intra-abdominal drains following cesarean delivery remains a largely unjustified practice. Compelling clinical evidence indicates that prophylactic drainage may be inherently deleterious; consequently, its application should be strictly limited to exceptional circumstances where a definitive indication exists. Surgical drains must not serve as alternatives to meticulous dissection or the achievement of rigorous intraoperative hemostasis.¹⁰

Drain-site herniation represents a rare but clinically significant complication of abdominal surgery. Its true incidence remains largely unquantified, as the existing literature is primarily confined to isolated case reports and small series. Documented predisposing factors for drain-site hernias include the use of large-bore drains, maternal obesity, localized wound infection, poor nutritional status, elevated intra-abdominal pressure (e.g., chronic coughing, vomiting), prolonged drain duration, and inadequate fascial closure at the exit site.¹¹

Fallopian tube prolapse through a post-cesarean drain tract involves unique anatomical dynamics. During the immediate puerperal period, the enlarged, slowly-involuting uterus elevates the adnexa toward the anterior abdominal wall. This temporary anatomical shift places the fallopian tubes in close proximity to lateral abdominal wall incisions or drain tracts.⁵ In our patient, the distinct resistance encountered during drain removal strongly suggests that a segment of the left fallopian tube was inadvertently entrapped or suctioned into the drain fenestrations during extraction, facilitating its subsequent migration through the unclosed fascial defect.

Diagnosing this complication requires a high index of suspicion. A prolapsed fallopian tube can easily be misidentified as granulation tissue, incarcerated omentum, a loop of bowel, or an infected wound slough. Delayed recognition exponentially increases the risk of tissue strangulation, localized ischemia, and eventual necrosis, culminating in the irreversible loss of adnexal function. Historically, most cases of post-cesarean tubal herniation required open relaparotomy, often concluding with a salpingectomy due to advanced ischemic compromise. In contrast, our case highlights the substantial utility of an early laparoscopic approach. Laparoscopy offers clear diagnostic visualization of the pelvic structures, allows for a controlled, atraumatic reduction under direct vision, and permits real-time assessment of tubal perfusion before and after reduction. Furthermore, a minimally invasive approach minimizes postoperative pain, shortens hospital

stays, and optimizes cosmetic outcomes for young patients.

This case adds to the expanding body of literature discouraging routine or prophylactic abdominal drainage following uncomplicated cesarean sections, as the inherent risks of drain-related morbidity often outweigh theoretical clinical benefits. When a pelvic drain is clinically indicated, mitigating strategies should be employed to prevent herniation. Smaller-caliber, smooth-walled drains with few or no side holes should be used. The abdominal drain should not be placed within the primary surgical incision, since this can weaken the wound. An oblique or tunneled tract technique should be used during insertion through the abdominal wall. Any negative pressure within the closed drainage system should be released prior to extraction. The drain should be given 360° rotations before it is withdrawn. The drain should be extracted gradually and gently, without excessive force. The fascial defect should be formally closed if a large-bore drain (>10 mm) is used.

CONCLUSION

Fallopian tube herniation through a post-cesarean drain site is an exceptionally rare complication where tactile resistance during drain removal serves as a critical warning sign of tissue entrapment. Prompt clinical recognition is essential to prevent tissue strangulation, ischemic injury, and the irreversible loss of fertility. In such cases, laparoscopic reduction successfully avoids the morbidity of an open relaparotomy and preserves the tube without requiring a salpingectomy. This case highlights the importance of cautious drain use, meticulous drain removal techniques, and consideration of fertility-preserving laparoscopic management whenever viable adnexal tissue is encountered.

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