

Laparoscopic Transabdominal Preperitoneal Repair of Left Supravesical Hernia: A Detailed Case Report and Review of Literature

**Dr. Anusuya. C¹, Prof. Dr. Muthukumaran. G², Dr. Touzeen. Hussain³,
Dr. Ritesh. R⁴**

^{1,3,4}Post graduate, General Surgery, Saveetha Medical College and Hospital, Thandalam

²Professor, General Surgery, Saveetha Medical College and Hospital, Thandalam

Abstract

Background: Supravesical hernia is a rare subtype of pelvic hernia occurring through a defect in the supravesical fossa, bordered by the medial and median umbilical ligaments above the urinary bladder. These hernias account for less than 4% of all hernias and often pose a diagnostic challenge due to their nonspecific clinical presentation, ranging from asymptomatic groin swelling to bowel obstruction or urinary disturbances.

Case Presentation: We present a case of a 49-year-old male with a two-year history of left groin swelling and intermittent episodes of upper abdominal discomfort. Physical examination revealed a 5*4 cm globular swelling in the left groin, extending to the root of the scrotum, reducible, with a positive cough impulse and smooth surface. Ultrasonography revealed a 1 cm defect in the left inguinal region with bladder herniation. The patient underwent successful laparoscopic transabdominal preperitoneal (TAPP) repair under general anesthesia. Intraoperative findings included two direct hernias on the left side with the urinary bladder as the hernia content. A composite mesh was placed and secured with tackers. Postoperative recovery was uneventful, and the patient was discharged with significant symptomatic improvement.

Discussion: Supravesical hernias are classified as internal or external based on their anatomical location. They may involve the bladder, leading to urinary symptoms or complications. Early diagnosis is essential, and imaging studies such as ultrasonography and computed tomography (CT) play a vital role. The TAPP approach offers advantages such as superior visualisation, precise dissection, and effective mesh placement.

Conclusion: This case underscores the importance of considering supravesical hernias in the differential diagnosis of groin swelling and demonstrates the efficacy of laparoscopic TAPP repair in managing such cases. Early surgical intervention is crucial to prevent complications.

Keywords: Supravesical hernia, urinary bladder herniation, laparoscopic transabdominal preperitoneal repair (TAPP), direct inguinal hernia, groin swelling, mesh repair.

1. Introduction

Supravesical hernias are rare anatomical defects occurring in the supravesical fossa, an area defined by the medial and median umbilical ligaments above the bladder. These hernias may be congenital or acquired and can present as internal or external types. They represent less than 4% of all internal hernias and are often associated with urinary symptoms when the bladder herniates through the defect. Early recognition and management are critical, as untreated cases may lead to complications such as bowel obstruction or bladder injury.

This case report presents a rare instance of a left supravesical hernia with bladder herniation, managed successfully with laparoscopic transabdominal preperitoneal (TAPP) repair. The case highlights the importance of preoperative imaging, meticulous surgical technique, and postoperative care.

Case Presentation:

A 49-year-old male presented with a two-year history of left groin swelling, which was insidious in onset and gradually progressive to attain the current size, aggravated during coughing and heavy weight lifting, reduced manually by himself. He reported intermittent left upper abdominal pain aggravated by bending two days before admission, which had since subsided. There were no associated symptoms of fever, nausea, vomiting, abdominal distension, or changes in bowel habits or bladder habits.

Clinical Examination

General Examination:

The patient was conscious, oriented, alert and afebrile. Vital signs were stable: pulse rate - 68 bpm, regular, normal volume, blood pressure 120/80 mmHg at left arm in sitting posture, oxygen saturation 98% on room air.

Regional Examination:

INSPECTION- Left Inguinal region - standing posture:

- A solitary swelling was situated in the left Inguinal region
- Swelling is extending from 6 cm away from anterior superior iliac spine along Inguinal canal towards scrotum
- It is a globular shape of approximately 5*4 cm
- Skin over the swelling- normal
- No redness, edema, dilated vein, scars or pigmentation
- Expansile cough impulse - present
- No visible peristalsis over the swelling
- Scrotum appears normal

PALPATION

- No local rise of temperature
- Non-tender
- Globular shape of 5*4 cm
- Extending 6 cm away from anterior superior iliac spine to scrotum
- Smooth surface

- Soft and elastic in consistency
- Medial to pubic tubercle
- Reducibility- completely reducible
- Ziemann's test- Impulse felt on middle finger
- Deep ring occlusion test - Swelling did not appear
- Palpable expansile impulse on coughing over the external ring

Systemic Examination:

Cardiovascular, respiratory, and central nervous system examinations revealed no abnormalities.

Investigations :

Laboratory Tests: Baseline investigations were within normal limits.

Imaging: Ultrasonography revealed a 1 cm defect in the left inguinal region with the urinary bladder herniating through it.

Surgical Management :

The patient underwent a transabdominal preperitoneal (TAPP) repair under general anesthesia.

Surgical Procedure:

Pneumoperitoneum was created using a Veress needle.

A 10 mm suprapubic camera port and two 5 mm working ports were placed under direct vision.

The abdominal cavity was visualized, and two direct hernias were identified on the left side, with the bladder as the hernia content.

A peritoneal incision was made 5 mm above the defect, extending from the anterior superior iliac spine to the median umbilical ligament.

The hernia sacs were dissected, partially reduced, and the distal sac was resected.

A composite mesh was laid over the defect and secured with tackers to the pubic tubercle, Coopers ligament, and areas medial and lateral to the inferior epigastric vessels.

The peritoneum was approximated with tackers, and pneumoperitoneum was reversed.

Intraoperative Findings:

Two direct hernias on the left side with bladder herniation.

No defects on the right side.

Grossly normal appearance of abdominal organs.

Postoperative Course:

The patient's recovery was uneventful. He demonstrated significant symptomatic improvement and was discharged on postoperative day 3 with advice for follow-up.

Discussion:

Supravesical hernias are rare entities with varying clinical presentations. The herniation of the bladder is a distinguishing feature that may result in urinary symptoms or complications such as bladder strangulation or rupture. Early and accurate diagnosis is essential. Imaging modalities such as ultrasonography and CT provide valuable information for preoperative planning. Laparoscopic techniques, particularly the TAPP approach, are increasingly preferred due to their minimally invasive nature, superior visualisation, and effective mesh placement. The TAPP approach allows for precise dissection and secure repair, reducing the risk of recurrence and postoperative complications. This case emphasises the importance of considering supravesical hernias in the differential diagnosis of groin swellings and highlights the efficacy of laparoscopic repair techniques.

2. Conclusion

Supravesical hernias, though rare, should be part of the differential diagnosis in patients with groin swelling and urinary symptoms. Accurate diagnosis and timely surgical intervention are crucial. The TAPP approach provides a safe and effective method for managing these hernias, offering favorable outcomes and faster recovery times.

References

1. Cisse, M., et al. (2009). Internal supravesical hernia as a rare cause of intestinal obstruction: A case report. *Journal of Medical Case Reports*.
2. Mehran, A., Szomstein, S., & Rosenthal, R. (2004). Laparoscopic repair of an internal strangulated supravesical hernia. *Surgical Endoscopy*, 18(3), 554.
3. Alkhaldi, A., et al. (2023). A case of bowel obstruction due to a rare supra-vesical hernia. *International Journal of Surgery Case Reports*.





