

HIDDEN IN PLAIN SIGHT: A DIAGNOSTIC SURPRISE - RARE CASE OF SUPRAVESICAL HERNIA

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ABSTRACT

Supravesical hernia (SH) is a rare type of abdominal wall hernia arising from the supravesical fossa, accounting for less than 4% of abdominal hernias. External supravesical hernias are particularly uncommon and frequently misdiagnosed preoperatively due to their close resemblance to direct inguinal hernias. Here we are presenting one such case of supravesical hernia which was diagnosed laparoscopically.

1. INTRODUCTION

Abdominal wall hernia is the protrusion of the bowel or the peritoneum, mesentery, or omentum into an orifice which is usually a preexisting foramen, recess, fossa, or congenital defect of the mesentery in the abdominal cavity.

Supravesical hernia (SH) is a rare form of abdominal hernia which arises from the supravesical fossa.

The incidence of supravesical hernia in abdominal hernia is <4% and the incidence of these hernias causing bowel obstruction in 0.5% to 1% of cases. They often occur in men around the age of 50. In internal supravesical hernia, the bowel loops herniate into the prevesical (Retzius) space while in external SH, the bowel herniates parallel, behind and above the bladder.

Supravesical hernia may be asymptomatic for many years which makes the clinical diagnosis to be difficult. The clinical presentation of supravesical abdominal hernia is initially nonspecific and can present with intermittent symptoms. Internal SH presents mostly with acute features of small bowel obstruction and strangulated internal hernia, while external SH presents clinically similar to that of direct hernia as the protrude anteriorly through abdomen wall and expand in the inguinal canal mimicking direct inguinal hernia. These hernia can be recognized preoperatively on CT scan.

Computed tomography (CT) scan is the gold standard test for diagnosing supravesical abdominal hernia with specific signs on CT such as abnormal localization of the small bowel in abdominal cavity.

Since External SHs are difficult to diagnose clinically, they are confirmed mostly intraoperatively. Once SH is diagnosed, surgical repair is the definitive treatment. This is done along with reduction of the herniated bowel and closure of the hernia orifice.

Laparoscopic (TAPP) approach is considered superior to the conventional inguinal approach, because TAPP provides a clearer vision of the operating field and is to be safe and reliable as compared to conventional methods

Case report

A 65 year old male, from Thiruvanamalai, farmer by occupation presented to the OPD with complaints of swelling in the right groin region for 5 months. A right sided direct reducible bubonocoele inguinal hernia was diagnosed clinically. The patient is a known case of diabetes mellitus for 10 years, known case of systemic hypertension and known case of heart failure with preserved ejection fraction on regular medications.

On examination, the patient appears to be moderately built, vitally stable, showing showing no signs of pallor, icterus, cyanosis, clubbing, lymphadenopathy or oedema. Systemic examination was unremarkable. On per abdominal examination, the abdomen was found to have normal contour and respiratory movements with no appreciable scars, dilated veins, abdominal lump or organomegaly. On standing, a unilateral swelling was present on the right side of size 3x2cm, hemispherical in shape, confined to the inguinal region, cough impulse visible and reduced completely on lying down. No swelling in other hernial sites was appreciable.

Biochemical laboratory data showed no remarkable abnormality. On ultrasonography of the abdomen and pelvis, there was evidence of herniation of omentum through a rent of approximate size 2 cm in the anterior abdominal wall in the right inguinal region. Prostate was grossly normal with no significant post voidal residue.

The patient was planned for laparoscopic trans-abdominal preperitoneal repair of hernia (TAPP). On the operating table, the patient was placed in supine position and 3 ports placed. Intraoperatively, a hernial defect of size approximately 3x3cm was visualized medial to the medial umbilical ligament, between Median umbilical ligament and medial umbilical ligament. Right-sided supravesical hernia was diagnosed only at that point.

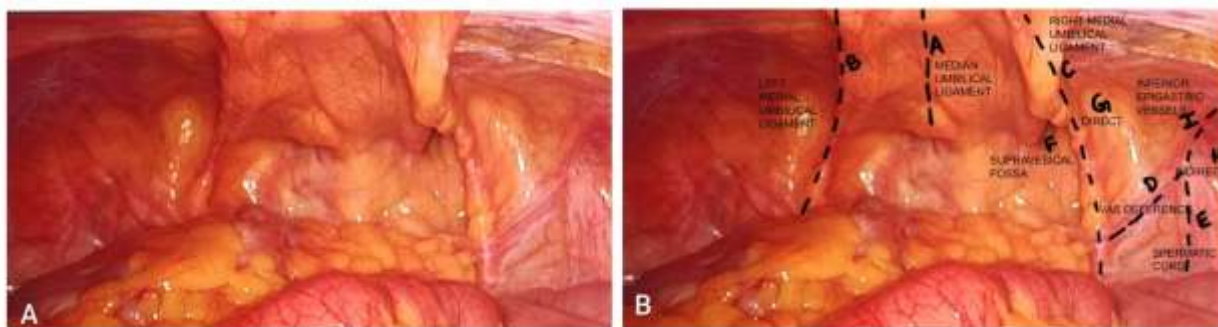


Fig. 1: (A) Intraoperative findings showing right internal Supravesical hernia (B) markings of the intraoperative findings

The surgical procedure was the same as TAPP inguinal hernia repair. First peritoneum incision made 5cm away from defect and space of bogros dissected followed by dissection of retzius space . The supravesical hernial sac was dissected off the pseudosac and reduced. Retropubic space dissected upto 4cm behind the pubic arch and obturator nerve visualised.

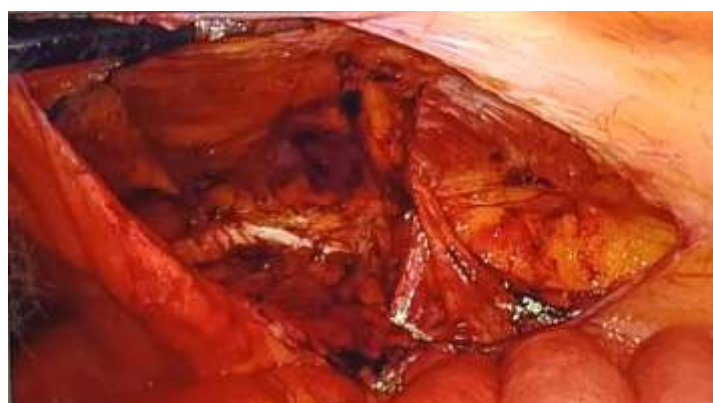


Fig. 2: Peritoneal incision made showing supravesical hernia defect

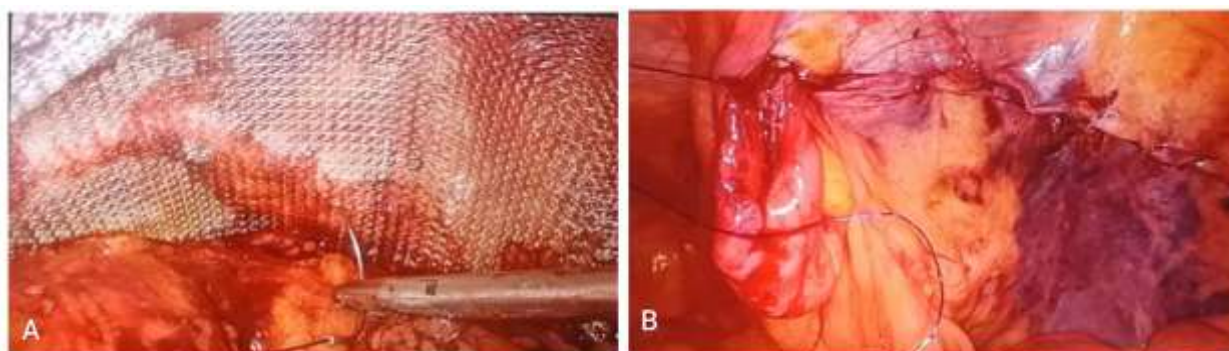


Fig. 3: (A) Intraoperative mesh placement, (B) Peritoneal closure

Pseudosac was tacked against rectus muscle. Polypropylene mesh of size 15x12cm was placed and fixed with 2-0 PDS sutures, followed by peritoneal closure. Postoperatively patient was stable and was started on liquid diet on the same day. The patient's recovery was uneventful and was discharged on 2nd post op day. That patient has been asymptomatic for 6 months.

DISCUSSION

Supravesical hernia is a rare condition of the abdomen wall hernias. The first case of external supravesical hernia was reported by Sir Astley Cooper in 1804 and 10 years later Ring described the first internal supravesical hernia.

Anatomically, Supravesicular fossa is a triangular fossa which is located between the median umbilical ligament (urachus) and the medial umbilical ligaments (obliterated umbilical arteries), just superior to the urinary bladder. The inferior boundary is formed by the peritoneal reflection that extends from the anterior abdominal wall to the dome of the bladder

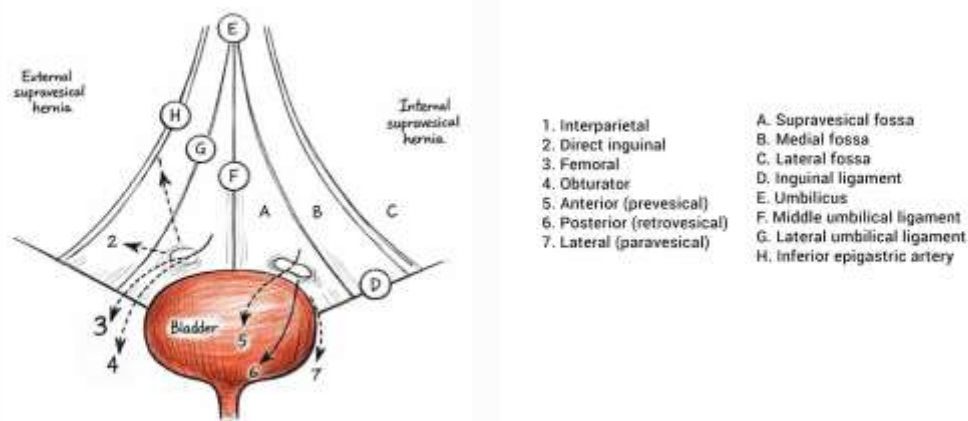


Fig. 4: Anatomy of Suprapubic hernia.

The exact pathophysiology mechanism is uncertain. One theory suggests that the abnormal retrogression of fetal structures may predispose to the development of SH, this is most commonly associated with weakness of the transverse abdominis aponeurosis and transversalis fascia.

According to Veselin Stanisic et al in his study says, formation of concave peritoneal depression of the paravesical space is significantly influenced by atrophy of the peritoneal fat due to various factors (aging, malnutrition, and disease), which predisposes to the formation of inflammatory areas, which creates scars on which hernias appear. Thirdly, another factor associated with this type of hernia is the increase in intra-abdominal pressure.

Incidence of suprapubic hernias is mainly in adult men as a result of antero-superior enlargement of the bladder during its filling. While in women, the enlargement of the bladder during its filling is lateral, which is why suprapubic hernias are less common in them.

The suprapubic hernia is either external or internal depending on the direction of sac protrusion. External suprapubic hernia protrudes into the inguinal canal mimicking a direct inguinal hernia and so are difficult to diagnosis clinically, whereas an internal suprapubic hernia remains inside the abdomen, and is silent until complicated.

Ours in a case of external suprapubic hernia which initially on clinical examination was diagnosed as direct inguinal hernia.

External SHs are not included in any classification. The incidence of external SH is scantily reported in existing literature due to its rarity, difficulty in clinically diagnosing external SH, these hernias are often missed. A vast majority of studied cases being reported are of the internal variety of SH. Their diagnosis is majorly confirmed intraoperatively.

Pre-operative diagnosis of SH is possible with CT (CT scan) or abdominal magnetic resonance imaging (MRI). It shows finding of bowel loops in the suprapubic space or near the bladder, distortion of the bladder wall. Small bowel dilatation on CT scan or MRI may suggest a diagnosis, but often findings are not specific. Laparoscopic exploration is of great help in the diagnosis of internal hernias and surgical treatment. Open surgeries are not preferred as these hernias present similar to direct inguinal hernias when approached anteriorly. Cystoscopy may show a tunnel shaped deformity in the bladder wall indicating a hernia at that side. Herniography can help in the preoperative diagnosis and can show suprapubic hernia. Once diagnosed, surgical intervention is of utmost importance for the reduction of the involved viscera and subsequent repair of the abdominal wall defect. TAPP is considered superior to the other forms of laparoscopic repair like TEP or eTEP, because this type of suprapubic hernia can be easily missed in TEP or eTEP repair due to its similarity with direct inguinal hernia.

There is no golden standard for surgical procedure in internal suprapubic hernia, but trends can be seen from our literature review the hernia orifice was closed with sutures in 15 out of 17 cases (88%), which is thought to be important in preventing recurrence, but not Closing the orifice does not pose any complication. Sac resection was only done in 2 out of the 17 cases, and is thought to be unnecessary

In fact, Marco et al. discuss that sac dissection poses the risk of bladder damage

Peritoneal incision is done in a fashion similar to the TAPP approach of inguinal hernia repair allows precise mobilization and incision of the peritoneum.

In our case, the patient was planned for TAPP repair for direct inguinal hernia, but intraoperatively, hernial sac was visualised medial to the medial umbilical ligament and was diagnosed as external suprapubic hernia.

The contents of the sac was then reduced and preoperational space created and mesh placed covering the suprapubic, direct and indirect hernial orifice. With its evident diagnostic and therapeutic advantages, laparoscopic hernia repair can bridge the lacunae in current literature, revealing the true incidence of external SHs, which are presently grossly underreported

CONCLUSION

External suprapubic hernia is a rare but clinically significant variant of herniation arising from the suprapubic fossa, and it is frequently misdiagnosed preoperatively due to its resemblance to direct inguinal hernia and other groin hernias.

Laparoscopic approaches — particularly transabdominal preperitoneal (TAPP) repair — provide superior visualization of the hernial orifice, facilitate accurate diagnosis, and allow safe reduction of herniated contents such as bowel or even ovary, as documented in case reports. Mesh repair during these minimally invasive procedures is feasible and appears to reduce recurrence risk when adequate coverage (e.g., extending 2–5 cm beyond the hernia orifice) is ensured. Given the rarity of external SH and limited data, awareness among clinicians is essential because unrecognized SH during conventional open repair may lead to recurrence, strangulation, or other complications.

Although long-term outcomes remain sparsely reported, current literature supports laparoscopic mesh repair as a safe and effective strategy; further studies and larger case series are warranted to define the optimal surgical technique and standardize perioperative management

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