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A rare case of female left inguinal hernia with ovary as a content and mullerian agenesis

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Abstract

Herniation of the ovary through the inguinal canal is an uncommon clinical entity, predominantly seen in pediatric patients and rarely encountered in adult females. Its clinical relevance lies in its potential to present as an irreducible or painful inguinal swelling, often leading to diagnostic uncertainty and an increased risk of ovarian compromise. This case report describes a 19-year-old female who presented with a painful left inguinal swelling associated with intermittent lower abdominal discomfort for the past 3-4 days. Clinical examination revealed a tender, irreducible mass in the left inguinal region with no features of intestinal obstruction. Ultrasonography demonstrated herniation of the left ovary within the inguinal canal, with preserved vascularity, confirming the diagnosis and excluding bowel involvement. Pelvic imaging further revealed absence of the uterus with bilateral hypoplastic ovaries, suggestive of Müllerian agenesis.

The patient underwent surgical exploration, which revealed a left indirect inguinal hernia containing the left ovary. After careful intraoperative assessment, oophorectomy was performed. This was followed by transabdominal preperitoneal repair of the left inguinal hernia along with bilateral oophorectomy. Postoperative management included analgesia, antibiotics, and routine wound care, resulting in an uneventful recovery and satisfactory clinical outcome.

The presence of ovarian structures within an inguinal hernia necessitates prompt surgical intervention to prevent complications such as torsion, ischemia, and irreversible loss of reproductive

function. A high index of suspicion, appropriate preoperative imaging, and meticulous intraoperative decision-making are essential, particularly in women of reproductive age. Early diagnosis and timely surgical management ensure favourable outcomes and help minimize avoidable morbidity in this rare clinical presentation.

Keywords

Inguinal hernia, Ovary, Müllerian agenesis, Canal of Nuck, Ovarian herniation

Introduction

Left inguinal swelling is a common surgical presentation in clinical practice, most frequently attributed to inguinal hernia, lymphadenopathy, or soft tissue lesions. In female patients, inguinal hernias are relatively uncommon compared to males, and the presence of adnexal structures within the hernial sac is exceedingly rare, particularly in adults. Despite advances in imaging modalities and improved diagnostic accuracy, preoperative identification of unusual hernial contents remains challenging, often leading to unexpected intraoperative findings that necessitate prompt and judicious surgical decision-making [1-5].

Herniation of the ovary through the inguinal canal is predominantly described in pediatric patients and is usually associated with a patent canal of Nuck. In adult females, this condition is extremely uncommon and may be complicated by torsion, incarceration, ischemia, or cystic pathology of the ovary. The clinical presentation often mimics that of a complicated inguinal hernia, making differentiation from other groin pathologies difficult on clinical grounds alone[3]. Consequently, delayed diagnosis may result in irreversible ovarian damage and loss of reproductive potential [3,6,7].

Müllerian agenesis, also known as Mayer–Rokitansky–Küster–Hauser (MRKH) syndrome, is a rare congenital anomaly characterized by absence of the uterus and upper two-thirds of the vagina, with variable ovarian development. The association of ovarian inguinal herniation with Müllerian agenesis is exceptionally rare and reflects underlying embryological abnormalities involving the Müllerian ducts and gubernacular attachments. Altered pelvic anatomy and increased ovarian mobility in such patients may predispose the ovary to herniation through the inguinal canal [8,9].

The intraoperative discovery of ovarian tissue within an inguinal hernia, especially in the presence of associated Müllerian anomalies, poses a significant surgical dilemma regarding organ preservation and definitive hernia repair. Careful assessment of ovarian viability and consideration of the patient's reproductive potential are essential components of management. Awareness of this rare clinical entity and its possible associations is crucial to avoid inadvertent injury to adnexal structures and to ensure optimal surgical and gynecological outcomes [3,5].

In this article, we report a rare case of a 19-year-old female presenting with a painful left inguinal swelling, initially diagnosed as a complicated inguinal hernia, in whom intraoperative findings revealed a left indirect inguinal hernia containing the ovary associated with Müllerian agenesis. The case highlights the diagnostic challenges, embryological considerations, and surgical management of this unusual presentation.

CASE REPORT-

Patient information-

A 19-year-old female presented to the surgery department with a chief complaint of pain and swelling in the left iliac region for the past 3-4 days. The pain was acute in onset and was associated with two episodes of vomiting during the same period. There was no history of fever, altered bowel habits, urinary symptoms, or similar episodes in the past. The patient had no known medical comorbidities and was not on any regular medication. There was no significant past medical history. The patient had no past surgical history.

CLINICAL EXAMINATION

Per Abdomen:

A globular swelling of approximate size 4cm×3cm×2cm, which increases on coughing. Local examination did not reveal signs of inflammation or strangulation. On auscultation, bowel sounds were present. External genitalia were normal.

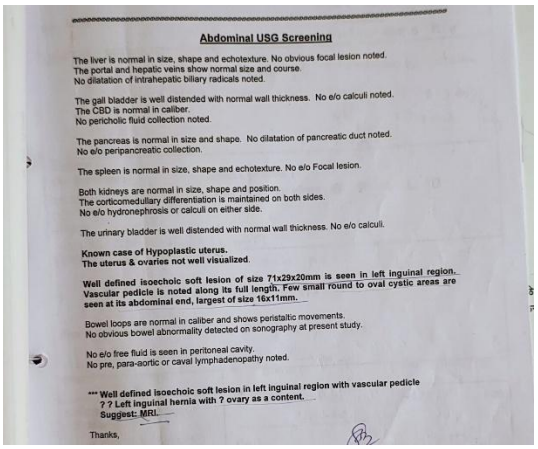
Per Rectal Examination:

Per rectal examination revealed no external abnormalities. There was no anal spasm. The rectum was empty. No tenderness, mass, or abnormality was appreciated on digital rectal examination.

DIAGNOSTIC ASSESMENT

Left inguinal hernia was suspected based on the clinical presentation. The patient had undergone an ultrasonography prior to presentation. The USG report showed – Known case of hypoplastic uterus. The uterus & ovaries not well visualized. Well defined isoechoic soft lesion of size 71x29x20mm is seen in left inguinal region. Vascular pedicle is noted along its full length. Few small round to oval cystic areas are seen at its abdominal end, largest of size 16x11mm. Well defined isoechoic soft lesion in left inguinal region with vascular pedicle

?? Left inguinal hernia with? ovary as a content.



Abdominal USG Screening

The liver is normal in size, shape and echotexture. No obvious focal lesion noted.
The portal and hepatic veins show normal size and course.
No dilatation of intrahepatic biliary radicals noted.

The gall bladder is well distended with normal wall thickness. No e/o calculi noted.
The CBD is normal in caliber.
No pericholic fluid collection noted.

The pancreas is normal in size and shape. No dilatation of pancreatic duct noted.
No e/o peripancreatic collection.

The spleen is normal in size, shape and echotexture. No e/o Focal lesion.

Both kidneys are normal in size, shape and position.
The corticomedullary differentiation is maintained on both sides.
No e/o hydronephrosis or calculi on either side.

The urinary bladder is well distended with normal wall thickness. No e/o calculi.

Known case of Hypoplastic uterus.
The uterus & ovaries not well visualized.

Well defined isoechoic soft lesion of size 71x29x20mm is seen in left inguinal region. Vascular pedicle is noted along its full length. Few small round to oval cystic areas are seen at its abdominal end, largest of size 16x11mm.

Bowel loops are normal in caliber and shows peristaltic movements.
No obvious bowel abnormality detected on sonography at present study.

No e/o free fluid is seen in peritoneal cavity.
No pre, para-aortic or caval lymphadenopathy noted.

***** Well defined isoechoic soft lesion in left inguinal region with vascular pedicle**
? ? Left inguinal hernia with ? ovary as a content.
Suggest: MRI.

Thanks,

Image 1: Ultrasonography of patient

SURGICAL INTERVENTION

The patient was taken up for elective laparoscopic surgery under general anesthesia after obtaining informed consent. Following induction of anesthesia, the patient was positioned supine, and standard aseptic precautions were observed. Pneumoperitoneum was established using a closed Veress needle technique through an infra-umbilical incision, and intra-abdominal pressure was maintained at appropriate levels. A 10-mm infra-umbilical port was inserted for the laparoscope, and two additional 5-mm working ports were placed in the right and left iliac regions under direct vision.

A thorough diagnostic laparoscopy was initially performed. Intra-abdominal examination revealed a left inguinal hernia defect with herniation of the left ovary along with the ipsilateral fallopian tube and round ligament into the inguinal canal. The right ovary, fallopian tube, and round ligament were identified separately and were found to be healthy and normally positioned. The uterus was notably absent,

confirming the diagnosis of Müllerian agenesis.

The herniated adnexal structures were carefully assessed for viability and gently reduced back into the peritoneal cavity without undue traction. In view of the intraoperative findings and the pathological involvement, a decision was made to proceed with bilateral oophorectomy. The ovarian pedicles were coagulated and divided using bipolar cautery, ensuring meticulous hemostasis throughout the procedure.

Subsequently, a transabdominal preperitoneal (TAPP) repair was undertaken. The peritoneum overlying the left inguinal region was incised, and a peritoneal flap was created by careful dissection to expose the preperitoneal space. Adequate dissection was performed to clearly delineate the myopectineal orifice. A polypropylene (Prolene) mesh of appropriate size was then placed to cover the hernia defect and reinforce the posterior wall. The mesh was positioned without fixation and adequately spread to ensure complete coverage.

The peritoneal flap was closed over the mesh using a continuous barbed suture, thereby restoring the integrity of the peritoneum and preventing mesh exposure to intra-abdominal contents. Hemostasis was re-confirmed, and no active bleeding was noted. Pneumoperitoneum was then completely released under direct vision. All ports were removed, and port sites were closed in layers using absorbable sutures. Sterile dressings were applied.

The patient tolerated the procedure well and was extubated uneventfully.

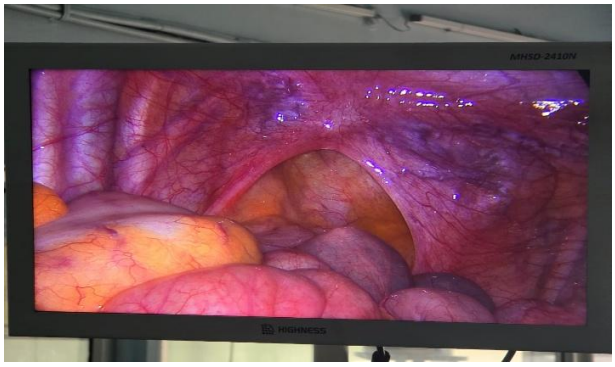
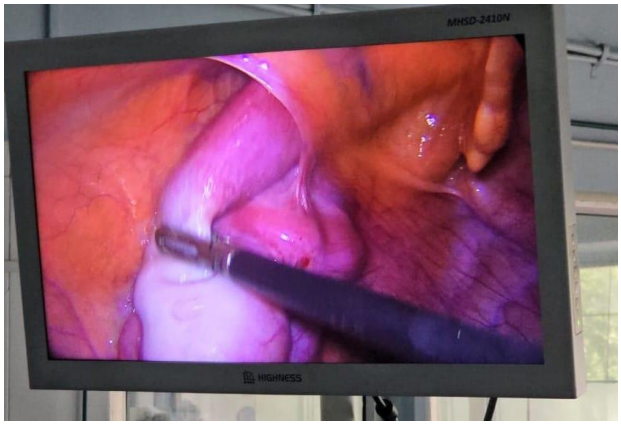


Image 2:showing uterine agenesis

Image 3:showing defect with content ovary



Images4:showing reduction of content

Discussion

Ovarian herniation through the inguinal canal is a rare phenomenon in adult females. The underlying embryological mechanism involves failure of obliteration of the canal of Nuck, allowing herniation of adnexal structures. Factors such as increased mobility of the ovary, elongated suspensory ligaments, and congenital

Müllerian anomalies may predispose to this condition.

The association of ovarian hernia with Müllerian agenesis is extremely rare. Müllerian agenesis results from failure of development of the Müllerian ducts and is characterized by absence of the uterus and upper vagina, often accompanied by normal or hypoplastic ovaries. The altered pelvic anatomy and lack of uterine support may contribute to increased ovarian mobility and subsequent herniation.

Clinically, ovarian inguinal hernias may be asymptomatic or present with pain due to torsion or incarceration. Preoperative diagnosis is crucial to prevent inadvertent injury to ovarian tissue during surgery. Ultrasonography serves as a valuable, non-invasive diagnostic tool, while MRI provides superior anatomical detail when Müllerian anomalies are suspected.

Surgical management aims at preserving ovarian function whenever possible. Gentle handling, assessment of viability, and reduction of the ovary into the pelvic cavity are recommended. Resection should be reserved only for non-viable ovarian tissue. Awareness of this rare condition helps avoid unnecessary oophorectomy and ensures appropriate management.

Conclusion

Inguinal hernia containing the ovary in adult females is a rare but clinically significant condition, particularly when associated with Müllerian agenesis. A high index of suspicion, thorough preoperative imaging, and meticulous surgical technique are essential for optimal outcomes. Early recognition allows preservation of ovarian tissue and prevention of long-term complications. Multidisciplinary management and patient counseling are crucial components of care in such rare presentations.

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