

Ovarian Inguinal Hernia in a Reproductive Age Group Woman: A Case Report

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ABSTRACT

Inguinal hernia is less common among women than among men. An inguinal hernia with adnexal structures like the fallopian tube and ovary as content is most rarely reported in the reproductive age group. A 39-year-old female presented with left inguinal region swelling since birth, associated with pain for over a month. Clinical examination revealed a reducible left inguinal hernia of size 3×3 cm. Hence, she underwent laparoscopic Transabdominal Preperitoneal (TAPP) mesh repair. During the surgery, content of hernial sac were found to be the left ovary and fallopian tube, one of the rarest in reproductive age group women. Inguinal hernia with adnexal structure-like ovary and fallopian tube are extremely rare finding in reproductive age group women. This case study is to underscore the importance of intraoperative vigilance and to reinforce on the importance of meticulous handling of such rare finding to safeguard the reproductive function with appropriate management plans.

Keywords: Adnexal herniation, Canal of nuck, Embryological defect, Inguinal swelling, Transabdominal preperitoneal mesh

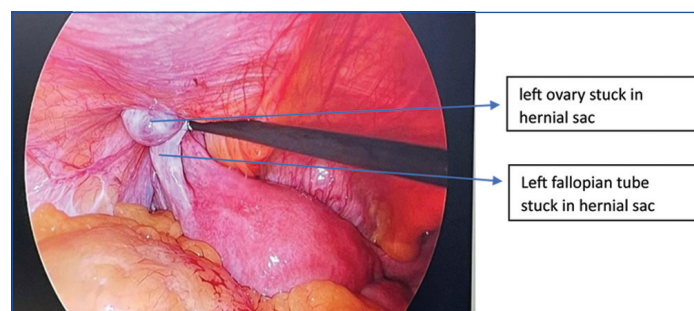
CASE REPORT

A 39-year-old female presented to the surgical outpatient department with complaints of swelling over the left inguinal region since birth, associated with pain over a month. On further enquiry, she reported a minimal increase in the size of the swelling over the past month. In particular, pain was aggravated while standing and walking. There were no complaints of straining during micturition, constipation, or chronic cough, and no history of heavy weight lifting. She had regular menstrual cycles, two normal vaginal deliveries, and underwent laparoscopic tubal sterilisation eight years earlier. The absence of issues related to conception, pregnancy, or other comorbidities indicated an unremarkable obstetric and medical history.

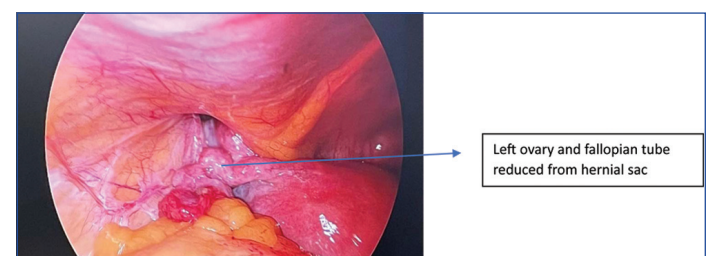
On examination, she was obese, her vitals were stable. On inspection, there was a 3×3 cm swelling over the left inguinal region. A reducible, non-tender, firm swelling was palpable, and the cough impulse was present. The right inguinal region appeared normal, with no gross swelling noted elsewhere. Bowel sounds were audible on abdominal auscultation. Based on the clinical history and examination findings, an inguinal hernia was strongly suspected. Ultrasonography (USG) of the abdomen revealed a 1.5 cm defect in the left inguinal region with omentum as its content. The remaining abdominal organs were reported to be normal.

Following confirmation of left inguinal hernia, the patient was scheduled for laparoscopic TAPP mesh repair. After anaesthetic fitness clearance, she was taken up for surgery. Intraoperatively, the left ovary and fallopian tube were unexpectedly found within the hernial sac [Table/Fig-1]. The viability of the adnexal structures was assessed carefully. The vascularity of ovary and fallopian tube

was intact, no evidence of incarceration or obstruction was found, and no congenital anomalies were detected. Hence, the content was pushed back to position in the abdominal cavity [Table/Fig-2]. This was followed by splitting and ligation of the hernial sac, and a preperitoneal mesh repair was performed over the hernial defect site [Table/Fig-3]. The uterus and other adjacent structures appeared to be normal. The postoperative period was uneventful. Oral sips of water were initiated after six hours, followed by clear liquids after 12 hours. The patient was managed with intravenous analgesics and antibiotics for 48 hours, which were subsequently switched to oral medications. She was discharged in stable condition on postoperative day 4. On follow-up at two weeks and three months postoperatively, she remained stable, and the surgical site had healed well.



[Table/Fig-1]: Intraoperative view showing left ovary and fallopian tube as content of the left inguinal hernial sac.



[Table/Fig-2]: Intraoperative view showing left ovary and fallopian tube after reduction of hernial sac.



[Table/Fig-3]: Intraoperative view after preperitoneal mesh repair over the hernial defect.

DISCUSSION

Inguinal hernia is the most common abdominal wall hernia, constituting nearly 75% worldwide [1]. The lifetime risk of indirect inguinal hernia in males is 26%, while in females it is 3% [1]. Routine hernial sac content was omentum and small bowel. However, indirect hernia can also present with unexpected findings like adnexa, sigmoid colon, caecum, appendix as content [2]. In particular, hernial content showing fallopian tube and ovary were commonly reported among paediatric populations but extremely rare among reproductive age group [2,3].

Ovarian hernia develops due to the patent canal of Nuck during the embryological period, which can pull the ovary and other adnexal structures through the persistent canal and create a congenital hernial sac or hydrocele [4]. This canal is homologous to process vaginalis, and it is formed when parietal peritoneum protrusion towards the labia majora fails to obliterate within the inguinal canal. The canal of Nuck should get obliterated by one year of post-natal life and suspend the ovary between the cornua and internal inguinal ring. But, if it remains patent, the ovary and fallopian tube are pushed through the canal to form a congenital inguinal hernia [5]. Alternative hypothesis was that the incomplete fusion of mullerian duct can give rise to hypermobility of the ovaries and can lead to entrapment of ovary in inguinal canal [6]. As per Okada T et al., 2012 multiparity can cause stretching of ovary, broad or suspensory ligament, which can lead to adnexal entrapment in inguinal canal [7].

If the adnexal structure is found as hernial content, we need to look for associated anomalies as they are associated with Mayer-Rokitansky-Kuster-Hausan syndrome (mullerian agenesis) [3]. The case study by Samantroy S et al., 2021 discussed middle-age group women with primary amenorrhoea, pain over left iliac fossa, USG confirmed twisted gangrenous ovary with fallopian tube and partially developed uterus; requiring oophorectomy and herniorrhaphy [8]. However, our patient did not have strangulated hernia, hence was able to preserve ovary.

The case reported by Ariaya A et al., 2024 discussed a very similar case, middle-age group women with pain and swelling over left inguinal region, diagnosed to have indirect inguinal hernia with left ovary and fallopian tube as content, undergone similar procedure [9]. The key difference in our case was the presence of inguinal swelling since birth.

Other case study by Wang L et al., 2025 discussed a middle-age group women with left inguinal hernia and surgical exploration detected the left ovary, a dysplastic fallopian tube, and a portion of a rudimentary uterine horn in a hernial sac, hence proceeded with

hernia mesh repair, resection of the rudimentary uterine horn, excision of the dysplastic fallopian tube, and oophorectomy done [10].

The core insights from this case study are: 1) All the women of reproductive age group with indirect inguinal hernia, should be evaluated early with ultrasound to detect the content of hernia; 2) Earlier imaging can prevent further complication like strangulation of ovaries and infertility; 3) Earlier surgical correction even in asymptomatic patient is essential; 4) Safe handling of gonads to preserve fertility in reproductive age group women.

CONCLUSION(S)

Overall, ovarian inguinal hernia in females is rare at reproductive age group, but surgeons are required to be prepared to encounter such unexpected findings and to apply suitable treatment. This case report is to underscore the importance of intraoperative vigilance and to reinforce the safe handling of adnexal structure to safeguard reproductive function with appropriate management plans.

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