



# Sliding Inguinal Hernia in Elderly Patient Containing Ovary and Fallopian Tube: A Case Report

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## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

## **Article Information**

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**Case Report**

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## **ABSTRACT**

**Introduction:** Inguinal hernia repair is one of the most common procedures performed by general surgeons, and it is a pathology that predominantly affects men. The contents of the hernia sac can vary greatly; typically, the omentum and small intestine are found in the hernia sac. However, there may be significant and uncommon variations that are documented and presented in order to improve the patient's diagnosis, treatment, and outcomes.

**Case Report:** We present the case of an 81-year-old female who consulted to the emergency department with symptomatic bilateral Inguinal hernias, one of which was determined to be a sliding Inguinal hernia containing the ovary and fallopian tube. A laparoscopic posterior preperitoneal approach was used to repair both defects. At the follow-up session, the patient had a great postoperative result without any complications.

**Discussion:** Commonly encountered in neonates, Inguinal hernias enclosing the ovary, fallopian tube, or uterus are frequently linked to genital tract congenital abnormalities. Although it is extremely uncommon for elderly patients to develop sliding hernias containing adnexa, high intra-abdominal pressures from frequent valsalva maneuvers, displacement of the ovary, Fallopian tube and uterus due to the elongation of the broad, uterine, or ovarian suspensory ligaments in patients with high parity, may be significant risk factors.

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**Conclusion:** Because the ovaries, fallopian tubes, and uterus may be affected, this example emphasizes the significance of giving female patients with Inguinal hernias close attention and effective management in younger patients, inadequate care may potentially affect fertility.

*Keywords: Inguinal hernia; sliding hernia; ovarian hernia; Transabdominal Pre-Peritoneal (TAPP).*

## 1. INTRODUCTION

Inguinal hernia repair is one of the bases of common practice in general surgery and one of the most common procedures performed by surgeons worldwide. The inguinal region accounts for the majority of abdominal wall hernias, accounting for approximately 75% of all cases [1]. Female inguinal hernias, on the other hand, are less common than males. Females have a 1.9% incidence of inguinal hernia, with a 6:1 male to female ratio [2]. The omentum and small intestine are usually present in hernias in the inguinal region; however, the presence of rare contents in the hernia sac such as vermiform appendix, ovary, Fallopian tube, and urinary bladder has been reported exceptionally in literature and studies with low incidence reports [3,4]. The term "sliding inguinal hernia" refers to a type of inguinal hernia in which a portion of the hernia sac wall is formed by an organ [5]. Sliding inguinal hernias of the Fallopian tube, ovaries, and uterus are uncommon in older women but can occur in female infants [6]. An 81-year-old female patient presented with bilateral inguinal hernias, one of which was a sliding indirect inguinal hernia containing the ovary and Fallopian tube.

## 2. CASE REPORT

An 81-year-old female patient arrived at the ER complaining of swelling and increasing pain in both groin regions. Physical examination revealed irreducible right and left groin hernias that were extremely painful to manipulate at the time of consultation. Relevant medical history of multiparity and prior diagnosis of bilateral inguinal hernias with no treatment offered at the time. The patient was admitted for surgical treatment due to a previous history and the time of onset of the symptoms. Despite manipulation, evidence of a left indirect sliding inguinal hernia containing the left ovary and Fallopian tube was irreducible during diagnostic laparoscopy, as both structures were attached to the sac via the broad ligament. Preperitoneal sac dissection allowed the sac and hernia content to be reduced. Reduced small intestine content was

found in a right indirect hernia. For both defects, bilateral transabdominal pre-peritoneal (TAPP) repair with polypropylene mesh was performed. Following surgery, the patient showed up for their follow-up appointment seven days later with a good postoperative outcome, no visible problems, and a satisfactory resolution of the hernia defects.

## 3. DISCUSSION

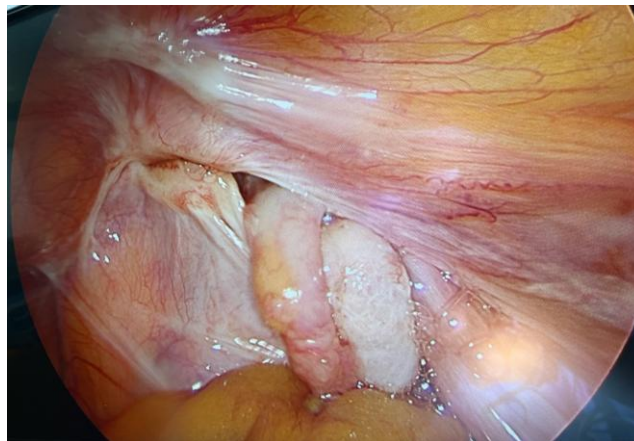
Groin hernias are the most common presentation of abdominal wall hernias among patients, as is well known. However, as reported in various series since the nineteenth century, male patients have a much higher incidence rate of inguinal hernias than female patients [7]. Inguinal hernias are more common on the right side in every subgroup studied, including children, women, and the elderly [8]. In both female and male patients, indirect hernias are more common than direct hernias. In females, indirect hernias are thirteen times more common than direct hernias [9,10]. The contents of an inguinal hernia can vary greatly; almost all intra-abdominal organs, including the stomach [11] and their pathologies, can be found within the hernia sac [12,13]. Rare contents of the hernia sac are uncommon, but due to the frequency of hernia repair procedures surgeons are likely to find some of this variations. The appendix, ovary, Fallopian tube, and urinary bladder are frequently encountered unusual contents. Adults and perimenopausal women may have fallopian tube and ovary content within the hernia sac. However, children are more likely to be affected [13,14].

Significant structural differences between men and women can explain differences in the incidence and types of inguinal hernias. The main differences include: the descent of the testes and ovaries, the pelvic bones, and the relationship of the muscular and fascial layers in the lower abdomen [7]. The descent of the testis in males causes groin weakness, which contributes to a higher incidence of hernias. The failure to obliterate the vaginal process is directly related to the formation of hernias in both male and female patients.

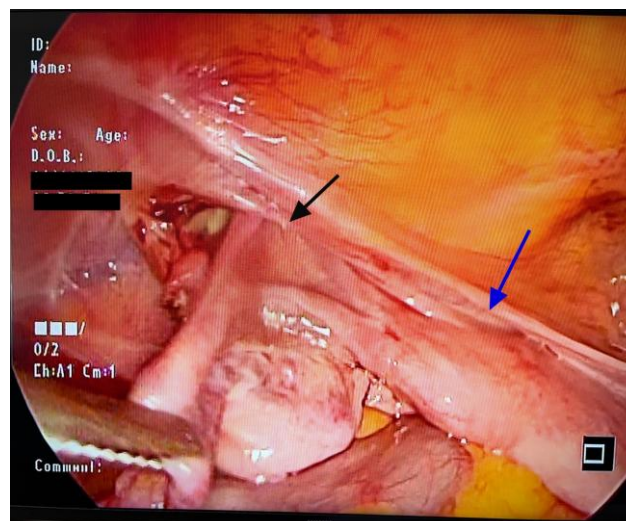
The ovaries will eventually reach the pelvis during the female development process. The ovary remains in the embryonic intra-abdominal position after birth, and the cranial part of the ovarian gubernaculum becomes the ovary's suspensory ligament. The caudal part will become the uterine round ligament. This ligament is frequently described as a homolog of the male gubernaculum and is considered to be the true suspensory ligament of the ovary [7,15]. Given that the distal portion of this ligament does not reach the labia majora but instead terminates in the hernia sac, it is reasonable to assume that the ovary in the hernia sac has mimicked the descent of the testis in the male patient. It is also important to note that peritoneal evagination caused by the round ligament and a failure of the processus vaginalis

to obliterate in childhood is directly related to the development of indirect hernias in female patients. Because the broad ligament is close to the internal ring, any traction on it or in the internal organs such as the ovary, Fallopian tube, or even the uterus can result in a sliding hernia [7,16,17]. This explains why sliding hernias containing the ovary and Fallopian tube are more common in pediatric patients and are frequently associated with other congenital anomalies [14,18,19].

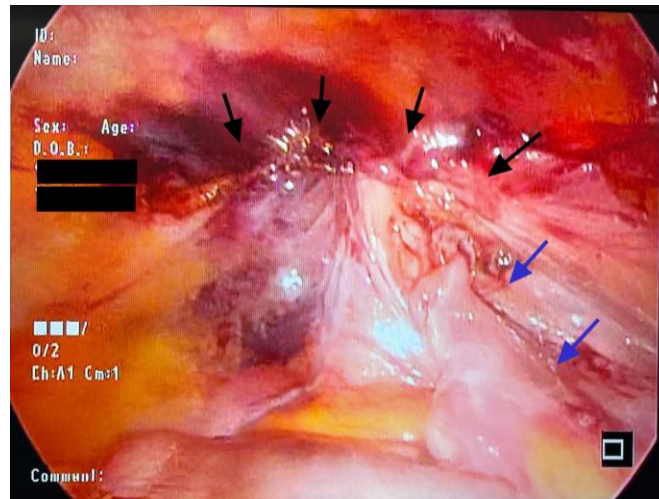
Longening of the broad, uterine, or ovarian suspensory ligaments in high parity patients, resulting in displacement of annexal structures and high intra-abdominal pressures from frequent valsalva maneuvers, may be important risk factors for elderly patients [20,21].



**Fig. 1. Sliding left inguinal hernia defect (posterior view; intraperitoneal) containing left ovary and Fallopian tube at the moment of exploratory laparoscopy**



**Fig. 2. The peritoneum, broad ligament, and round ligament (black arrow) form a sliding hernia sac that pulls the ovary, Fallopian tube, and uterus (blue arrow) within the defect**



**Fig. 3. Finalized TAPP procedure on left inguinal hernia defect, peritoneum closed with running absorbable suture (black arrows). Reduced left ovary and Fallopian tube and part of the hernia sac (blue arrows)**

A clinical examination is sufficient to confirm the diagnosis of a visible groin hernia. In cases of vague groin pain or swelling, ultrasound imaging can be used in addition to clinical examination. If clinical examination and ultrasound imaging are inconclusive, additional imaging studies may be considered [22]. This 80-year-old patient had a clear bilateral groin hernia that had previously been diagnosed. As a result of the quick onset of symptoms and the bilateral inguinal hernia, the decision was made to use a laparoscopic approach that would allow for the reduction and evaluation of the contents of both hernia sacs. The posterior approach via transabdominal preperitoneal (TAPP) dissection was chosen for this patient's treatment. However, treatment must be based on the surgeon's expertise, available resources, and individualized patient needs [22].

#### 4. CONCLUSIONS

This unique inguinal hernia presentation demonstrates the need for cautious consideration while diagnosing and treating inguinal hernias in older female patients who have a history of multiparity. There are numerous case reports in the literature of inguinal hernias in pediatric patients that contained an ovary, a Fallopian tube, or even a uterus. In these patients, congenital anomalies are frequently present. It is extremely uncommon to come across these findings in elderly patients, so a high index of suspicion, good diagnostic imaging, or the potential for a posterior laparoscopic approach that would provide the patients with a diagnostic and therapeutic approach in case of

an incarcerated or strangled hernia are all recommended due to the rarity of these findings in elderly patients.

#### CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

#### ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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