Case report

SLIDING INGUINAL HERNIA IN ELDERLY PATIENT CONTAINING OVARY AND FALLOPIAN TUBE : A CASE REPORT

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.

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.

Key words

Inguinal hernia; sliding hernia; ovarian hernia, transabdominal pre-peritoneal (TAPP)

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.

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.

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 facial 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, 19).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, 17, 18).
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).

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).

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.

Figure Legends

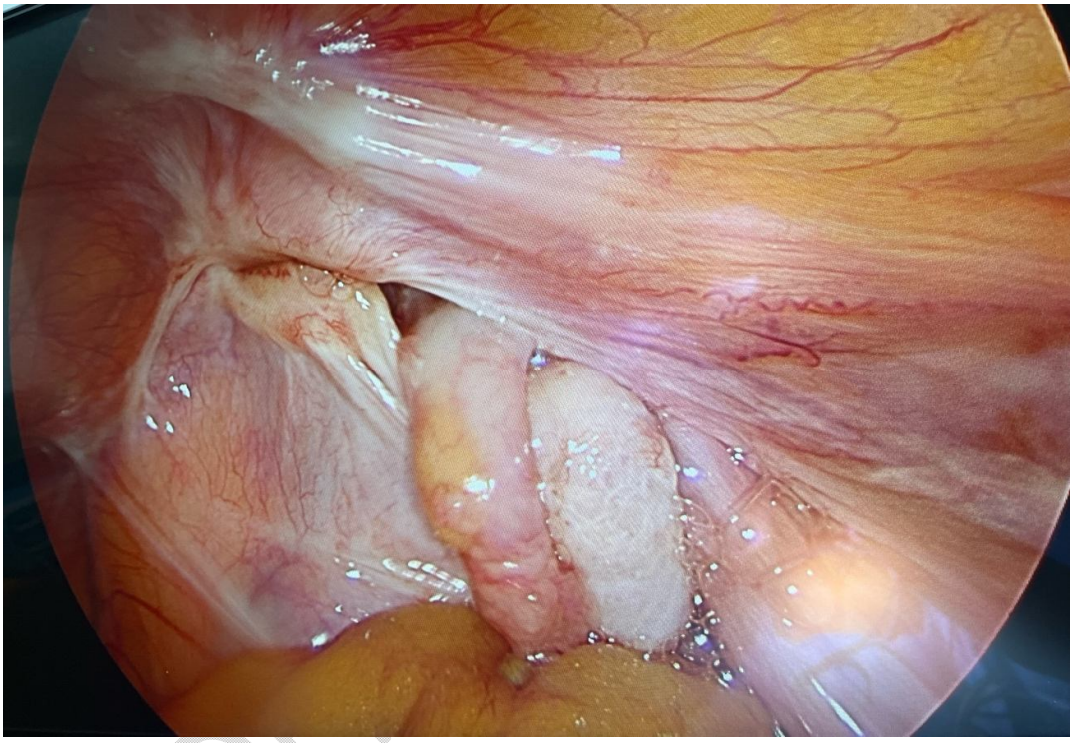

Figure 1. Sliding left inguinal hernia defect (posterior view; intraperitoneal) containing left ovary and Fallopian tube at the moment ofexploratory laparoscopy.

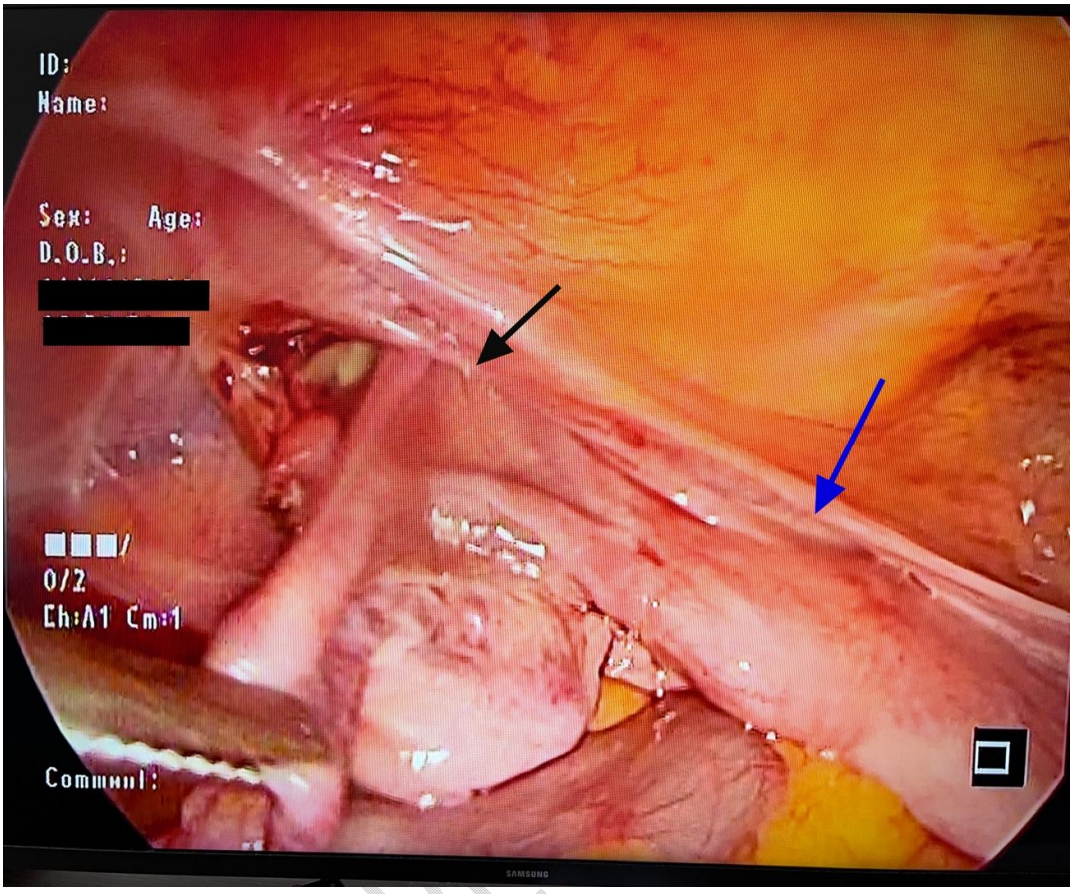

Figure 2.The peritoneum, broad ligament, and round ligament (black arrow) form a sliding hernia sac that pulls the ovary, Fallopian tube, and uterus (blue arrow) within the defect.

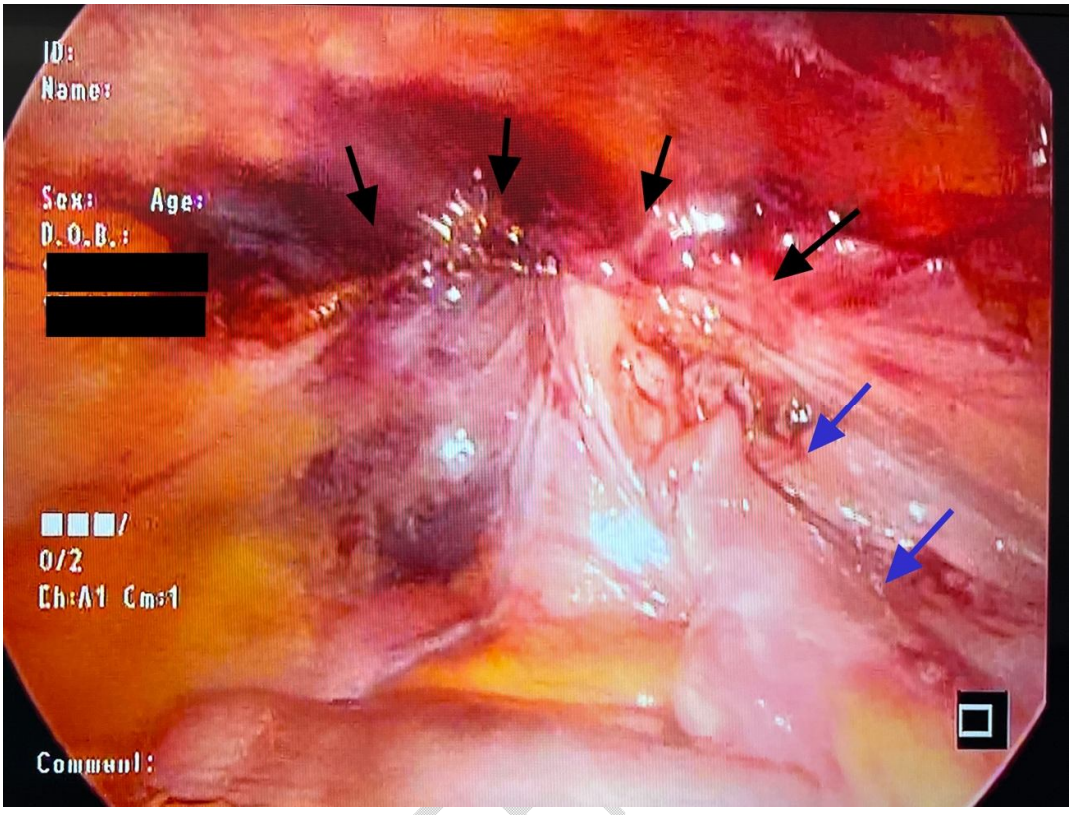

Figure 3. Finalized TAPP procedure on left inguinal hernia defect, peritoneum closed with running absorbable suture (black arrows). Reduced left ovary and Fallopian tubeand part of the hernia sac (blue arrows)

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SCARE Checklist			
Topic	**Item**	**Checklist item description**	**Page Number**
Title	**1**	The words "case report" and the area of focus should appear in the title (e.g. presentation, diagnosis, surgical technique or device or	1
Key Words	**2**	3 to 6 key words that identify areas covered in this case report (include "case report" as one of the keywords).	1
Abstract	**3a**	Introduction—What is unique or educational about the case? What does it add to the surgical literature? Why is this important?	1
	3b	The patient's main concerns and important clinical findings.	
	3c	The main diagnoses, therapeutics interventions, and outcomes.	
	3d	Conclusion — what are the "take-away" lessons from this case?	
Introduction	**4**	A summary of why this case is unique or educational with reference to the relevant surgical literature and current standard of care (with references, 1-2 paragraphs). Nature of the institution in which the patient was managed; academic, community or private practice setting?	2
Patient Information	**5a**	De-identified demographic and other patient specific information including age, sex, ethnicity, occupation and other useful pertinent information e.g. BMI and hand dominance.	**2**
	5b	Presentation including presenting complaint and symptoms	

		of the patient as well as the mode of presentation e.g. brought in by ambulance or walked into Emergency room or referred by family physician.	
	5c	Past medical and surgical history and relevant outcomes from interventions	
	5d	Drug history, family history including any relevant genetic information, and psychosocial history including smoking status and where relevant accommodation type, walking aids, etc.	
Clinical Findings	**6**	Describe the relevant physical examination and other significant clinical findings (include clinical photographs where relevant and where consent has been given).	2
Timeline	**7**	Inclusion of data which allows readers to establish the sequence and order of events in the patient's history and presentation (using a table or figure if this helps). Delay from presentation to intervention should be reported.	2
Diagnostic Assessment	**8a**	Diagnostic methods (physical exam, laboratory testing, radiological imaging, histopathology etc).	2
	8b	Diagnostic challenges (access, financial, cultural).	
	8c	Diagnostic reasoning including other diagnoses considered	
	8d	Prognostic characteristics when applicable (e.g. tumour staging). Include relevant radiological or histopathological images in this section (the latter may sometimes be better placed in section 9).	
Therapeutic Intervention	**9a**	Pre-intervention considerations e.g. Patient optimisation: measures taken prior to surgery or other intervention e.g. treating hypothermia/hypovolaemia/hypotension in a burns patient, ICU care for sepsis, dealing with anticoagulation/other medications, etc	3
	9b	Types of intervention(s) deployed and reasoning behind treatment offered (pharmacologic, surgical, physiotherapy, psychological, preventive) and concurrent treatments (antibiotics, analgesia, anti-emetics, nil by mouth, VTE prophylaxis, etc). Medical devices should have manufacturer and model specifically mentioned.	
	9c	Peri-intervention considerations - administration of intervention (what, where, when and how was it done, including for surgery; anaesthesia, patient position, use of tourniquet and other relevant equipment, prep used, sutures, devices, surgical stage (1 or 2 stage,	

		etc). Pharmacological therapies should include formulation, dosage, strength, route, duration, etc).	
	9d	Who performed the procedure - operator experience (position on the learning curve for the technique if established, specialisation and prior relevant training).	
	9e	Any changes in the interventions with rationale. Include intra-operative photographs and/or video or relevant histopathology in this section. Degree of novelty for a surgical technique/device should be mentioned e.g. "first in-human".	
	9f	Post-intervention considerations e.g. post-operative instructions and place of care.	
Follow-up and Outcomes	**10a**	Clinician assessed and patient-reported outcomes (when appropriate) should be stated with inclusion of the time periods at which assessed. Relevant photographs/radiological images should provided e.g. 12 month follow-up.	3
	10b	Important follow-up measures - diagnostic and other test results. Future surveillance requirements - e.g. imaging surveillance of endovascular aneurysm repair (EVAR) or clinical exam/ultrasound of regional lymph nodes for skin cancer.	
	10c	Where relevant - intervention adherence and tolerability (how was this assessed).	
	10d	Complications and adverse or unanticipated events. Described in detail and ideally categorised in accordance with the Clavien-Dindo Classification. How they were prevented, diagnosed and managed. Blood loss, operative time, wound complications, re-exploration/revision surgery, 30-day post-op and long-term morbidity/mortality may need to be specified.	
Discussion	**11a**	Strengths, weaknesses and limitations in your approach to this case. For new techniques or implants - contraindications and alternatives, potential risks and possible complications if applied to a larger population. If relevant, has the case been reported to the relevant national agency or pharmaceutical company (e.g. an adverse reaction to a device).	3
	11b	Discussion of the relevant literature, implications for clinical practice guidelines and any relevant hypothesis generation.	
	11c	The rationale for your conclusions.	
	11d	The primary "take-away" lessons from this case report.	

Patient Perspective	**12**	When appropriate the patient should share their perspective on the treatments they received.	-
Informed Consent	**13**	Did the patient give informed consent for publication? Please provide if requested by the journal/editor. If not given by the patient, explain why e.g. death of patient and consent provided by next of kin or if patient/family untraceable then document efforts to trace them and who within the hospital is acting as a guarantor of the case report.	-