

CASE REPORT

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When an inguinal hernia is more than just a hernia with ovary and fallopian tube involvement: a case report

Abraham Ariaya¹, Binyam Yohannes¹, Dereje Gebisa¹, Abdinasir Mohamed¹ and Goytom Knfe^{1*}

Abstract

Background Finding an ovary and/or fallopian tube within an indirect inguinal hernia is a rare occurrence that can be detected incidentally during elective surgery or present as a medical emergency requiring immediate intervention. Hence, it poses a difficult clinical picture in a reproductive-age woman with groin mass.

Clinical presentation We describe the case of a 45-year-old Ethiopian woman of Amhara ethnicity who presented with a left inguinal swelling that persisted for 5 years. Physical examination revealed an irreducible, non-tender lump in the left groin and an ultrasonography scan confirmed the presence of an indirect inguinal hernia. The patient was then scheduled for elective hernia repair. During the surgery, both her left ovary and fallopian tube were found within the hernial sac. The contents were released from the sac, high ligation performed, and the inguinal floor repaired with mesh.

Discussion Inguinal hernias in women are rare and often present a diagnostic challenge. Although the exact pathogenesis of inguinal hernias containing female genital organs is unknown, some risk factors have been postulated. Diagnosis should start with a physical exam and imaging, but many of the cases have been intraoperative surprises. Management is primarily surgical, ranging from simple reduction and hernia repair to salpingo-oophorectomy depending on the status of the hernia contents.

Conclusion This report emphasizes the importance of maintaining a high index of suspicion when examining females with inguinal hernias to ensure accurate diagnosis and management of tubo-ovarian hernias. Although rare, inguinal hernias containing female genital organs should be considered in the differential diagnosis of inguinal hernias, as early detection and appropriate surgical management can prevent potential complications.

Keywords Indirect inguinal hernia, Ovary, Fallopian tube, Diagnosis, Treatment

Introduction

An inguinal hernia is the protrusion of abdominal contents or preperitoneal adipose tissue through the inguinal canal. Inguinal hernias are the most common, accounting for 75% of all abdominal wall hernias [1] and inguinal

hernia repair is one of the major elective surgeries performed in surgical practice [2]. The contents of an inguinal hernia vary and may include different visceral organs. However, the most commonly encountered organs are the intestine and omentum. It is rare for groin hernias to contain parts of the female reproductive system, such as the fallopian tubes and ovaries [3, 4]. Reported cases of such hernias are typically found in the pediatric age group, often in premature infants or those with congenital abnormalities [1, 5, 6].

*Correspondence:

Goytom Knfe
knfegoytom@gmail.com

¹ Department of Surgery, St. Paul's Hospital Millennium Medical College, Addis Ababa, Ethiopia



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In this regard, we present a unique case of a left inguinal hernia containing ipsilateral ovary and fallopian tubes, which, to the best of our knowledge, is the first case of its kind to be reported in Ethiopia.

Case presentation

A 45-year-old para 2 female Ethiopian patient of Amhara ethnicity presented to our outpatient clinic with a left inguinal swelling of 5 years duration. She mentioned that the swelling was previously reducible but over the years became irreducible. The swelling did not increase in size, and she had no associated bowel habit change. Otherwise, our patient had no chronic cough, prior surgery, comorbidities or any pertinent personal or family history. On physical examination, her vital signs were in the normal range. There was a 4×4 cm bulge in the left inguinal area that was non-tender and irreducible, and when auscultated it lacked bowel sounds.

Baseline investigations were within normal limits. An ultrasound was done that was suggestive of an incarcerated omentum in an indirect inguinal hernia. With an assessment of incarcerated indirect inguinal hernia, she was scheduled for an elective mesh repair.

Through a left oblique inguinal incision under spinal anesthesia, the abdomen was approached, and the hernia sac was identified. When the sac was opened, we identified the contents to be the left ovary along with the fallopian tube (Fig. 1). There was a small 0.5×0.5 cm cyst located on the ovary; there was no other abnormality noted. The adhesion between the fallopian tube and the hernia sac was released, and the ovary and fallopian tube

were returned to the abdominal cavity. High ligation of the hernia sac was done followed by mesh repair of the inguinal floor. The patient had an uneventful post-op course and was discharged on the second postoperative day with oral analgesics. The patient was also seen on the 14th and 45th postoperative days, and no complications were identified.

Discussion

Given the rarity of the condition, there is a paucity of data regarding the prevalence of groin hernias containing parts of female genitalia. Gruer *et al.* reported that only 7 out of 1950 patients who underwent hernia repair had hernias containing the ovary and fallopian tube, which represents only 2.9% of the sample [7]. Abdominal wall hernias that involve gynecologic tissues are usually linked to congenital abnormalities and are more commonly seen in children [8, 9]. The ovary is the most frequently affected tissue in these types of hernias, accounting for approximately 20% of pediatric cases. Of these cases, 70% occur in children below the age of 5 years [10–12]. However, our patient, a mother of two with regular menstruation, had no prior history of inguinal swelling before the age of 40 years.

There is no documented level of incidence in the adult population, but it is clear from the reviewed literature that the prevalence decreases with age [13]. Among the female patients presenting with gynecologic structures as contents of a hernia, the mean patient age was 47.9 years, and over half of the patients ($n=9$; 56%) were women of reproductive age

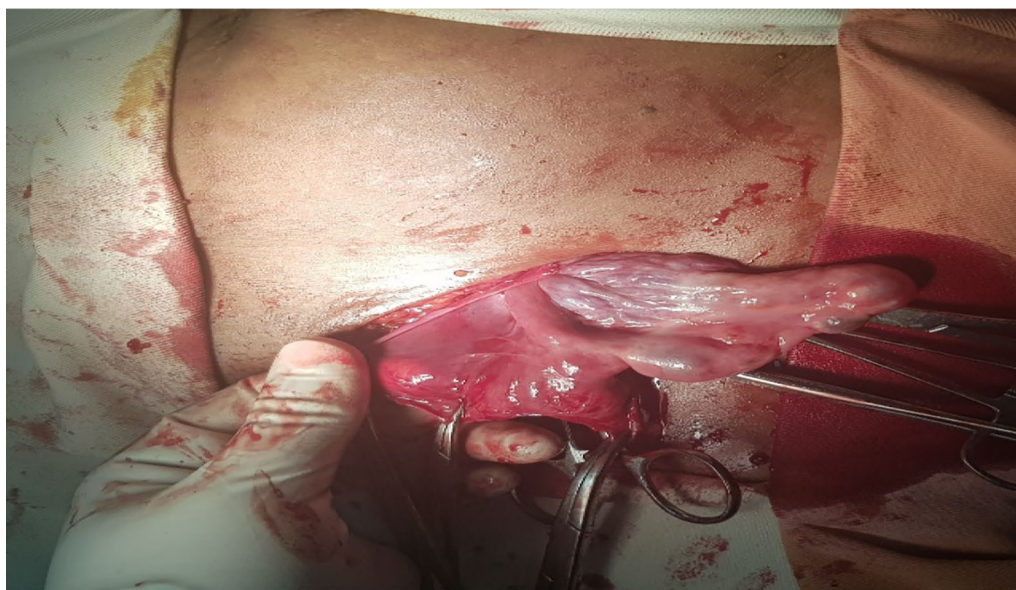


Fig. 1 Contents of the hernia sac; ovary and fallopian tube

(18–45 years)[9]. As was the case for our patient, the majority of inguinal hernias with ovarian and/or fallopian tubes as their contents (77%) were discovered to be left-sided and all were indirect inguinal hernias [7, 9, 10].

Most of the patients (88% of the patients) present with a groin mass or swelling in the inguinal region that may be reducible or not [3, 9]. An irreducible ovary in an inguinal hernia has been reported in 4–11% of all hernias with gynecologic contents, out of which only 2–33% present with torsion and strangulation [12, 14]. When such hernias are reported in adults, the majority are found in perimenopausal or postmenopausal women. Due to the rarity of this pathology, there is no clear explanation of its etiology in the reproductive age group [1, 10]. Risk factors include lengthening of the broad, uterine, or ovarian suspensory ligaments in high parity patients resulting in the displacement of adnexal structures and factors that increase intrabdominal pressure [15, 16]. However, neither adnexal pathology nor any of these risk factors were present in our case.

Hernias can usually be diagnosed by physical examination alone and be confirmed by ultrasound imaging. In cases where the ultrasound findings are ambiguous, a computed tomography (CT) scan can be used to confirm the diagnosis [8, 9, 17]. Sonographic features include a mass with multiple small sonolucent cysts indicating the ovary with or without a corpus luteum and the absence of one ovary in the lower pelvis on the same side as the inguinal hernia [17]. Nonetheless, despite the efforts made to diagnose the contents of inguinal hernias before surgery, most of them are made intraoperatively, as in our patient, who was operated on on the basis of an ultrasound suggestive of an incarcerated omentum in an indirect inguinal hernia [13, 14].

Timely intervention reduces the damage to the ovaries from torsion and strangulation and preserves future fertility [16, 18]. Both open and laparoscopic approaches have been described [19]. A conservative type of hernia repair with high ligation of the sac and careful release of the adhesions to surrounding structures and resection of strangulated hernias is recommended [10, 20]. The role of oophoropexy, to decrease the rate of torsion, has been debated among authors [12]. Prodromidou *et al.* also described cystectomy in two cases with concomitant ovarian cysts [9].

In our case, both the ovary and fallopian tubes were grossly healthy and deemed viable. We performed a reduction of the hernia content, left the small ovarian cyst in place, and did high ligation of the sac followed by mesh repair of the inguinal floor.

Conclusion

Inguinal hernias containing ovary and/or fallopian tubes are a rare finding, and hence, clinicians should maintain a high index of suspicion for hernias in adult females, especially on the left side. Most present with painless inguinal masses and imaging with ultrasound (US), and sometimes a CT scan may be needed. Management should depend on tissue viability, patient age, and reproductive wishes, and if malignancy is suspected, removal should be strongly considered.

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Author contributions

AA was involved in the surgery, conceptualized the study, and acquired data, and did the literature review and manuscript writing. BY was involved in the management of the patient and conception and design of the study. DG was involved in the management of the patient and conception and design of the study. AM was involved in the management of the patient and conception and design of the study. GK was involved in the management of the patient and did the literature review, manuscript writing, and the critical revision of the document.

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Declarations

Ethics approval and consent to participate

Ethical clearance is not required for the publication of case reports and case series in our institution.

Consent for publication

Written informed consent was obtained from the patient for the publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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