Inguinal hernia containing ovary in a female adult
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Section: Abdominal imaging
Area of Interest: Abdominal wall
Procedure: Diagnostic procedure
Imaging Technique: Experimental
Imaging Technique: Ultrasound
Imaging Technique: CT
Special Focus: Hernia Case Type: Clinical Cases
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Patient: 90 years, female

Clinical History:
89-year-old woman was admitted at our hospital for prostration and oliguria (known history of chronic renal disease). The patient was afebrile and moderately dehydrated. Laboratory tests showed slight leukocytosis (12000/mm³) and aggravation of chronic renal disease. During hospitalization, physical examination revealed a non-reducible left inguinal mass, causing rebound tenderness with palpation.

Imaging Findings:
Ultrasound directed to the inguinal region revealed a hypoechoic oval-shaped mass, with regular contours, exhibiting slight posterior acoustic shadowing. No vascularization was demonstrated with the colour Doppler study. There was also a small amount of fluid and hyperechoic adipose tissue within the hernial sac. Uterus had normal dimensions and morphology, according to the age group. The ovaries were not depicted. A complicated cyst of the canal of Nuck or an ovarian hernia were suspected. For further characterization, non-contrast pelvic CT was performed (because the chronic renal disease became acute), showing similar findings, with a slightly spontaneously hyperdense oval-shaped mass surrounded by fluid, apparently continuous with the round ligament of the uterus. There were no inflammatory signs within or around the hernia sac suggesting strangulation, and so the patient was prescribed analgesic therapy and fasting during the night, and surgery was performed the next morning.

Discussion:
Ovary-containing inguinal hernias are infrequent clinical entities, constituting, together with fallopian tubes, about 3% of the possible contents of the hernia sac. [1]

Herniation may occur when the canal of Nuck (a pouch of parietal peritoneum which follows the round ligament between the ovary and the labium majorum through the inguinal canal) fails to obliterate as predictable within the first year of life, remaining patent.
Only a few cases of inguinal hernia containing the ovary have been described in the literature. Although they may be diagnosed at any age, these hernias are rare in adult women and a little more common in infants. At this age group, herniation has sometimes been associated with Mullerian and renal malformations [2], and early diagnosis becomes extremely important because the risk of ovary incarceration and subsequent torsion is quite high. [3]

Ultrasonography, using a high-frequency transducer, is highly accurate in the evaluating of this inguinal lesion.
Diagnosis is easier in premenopausal women, because visualization of a solid mass containing cysts/follicles of varying size highly suggests the presence of an ovary in the hernia sac. [4, 5] If this mass is enlarged, has heterogeneous echogenicity and no blood flow within, an ovary torsion might be suspected.

In our patient, the ultrasonographic and CT aspects were compatible with a postmenopausal ovary, with no identifiable follicles.

Because the ultrasonographic findings were unspecific a CT examination was performed in order to further characterize the lesion. CT was useful in showing an apparent continuity of the mass with the round ligament of the uterus and absence of the left ovary.

Our patient was asymptomatic, most likely because there were no signs of strangulation at surgery, and we consider this an accidental finding, since it was unrelated to the clinical setting that led to the hospitalization.

Imaging findings may raise the suspicion of the presence of an ovary within the inguinal sac, but the ultimate diagnosis still relies on surgery and histopathologic characterization. Even if there are no signs of strangulation, ovary-containing hernias should be treated with surgical reduction or excision, each case being evaluated individually.

**Differential Diagnosis List:** Ovarian hernia, Cyst of the canal of Nuck, Inguinal hernia containing bowel

**Final Diagnosis:** Ovarian hernia

**References:**


Ashley Graul and Emily Ko (2014) Indirect Inguinal Hernia Containing a Fallopian Tube and Ovary in a Reproductive Aged Woman. Case Reports in Obstetrics and Gynecology 437340 (PMID: 25028618)
Description: A hypoechoic oval-shaped mass with regular contours was depicted (A), showing no vascularization with colour Doppler evaluation (B). Slight posterior acoustic shadowing was noted (C). There was also fluid and fat within the hernial sac. Origin: Department of Radiology, Hospital São Francisco Xavier, Lisboa, Portugal.
Description: Surgery was performed the next day, during which the presence of an ovary was detected inside the inguinal hernia sac. Consequently, oophorectomy was performed and the hernia was repaired. Origin: Department of General surgery, Hospital São Francisco Xavier, Lisboa, Portugal
**Figure 3**

*Description:* Sequential axial non-contrasted images show a slightly hyperdense oval-shaped mass surrounded by fluid. There are no inflammatory signs within or around the hernia sac suggesting strangulation. *Origin:* Department of Radiology, Hospital São Francisco Xavier, Lisboa, Portugal
Description: Coronal and sagittal non-contrasted images show a slightly hyperdense oval-shaped mass surrounded by fluid. There were no inflammatory signs within or around the hernia sac suggesting strangulation. Origin: Department of Radiology, Hospital São Francisco Xavier, Lisboa, Portugal
**Description:** Sequential axial non-contrast images show an apparent continuity of the mass with the round ligament of the uterus (red arrows). **Origin:** Department of Radiology, Hospital São Francisco Xavier, Lisboa, Portugal