

Inguinal hernia containing the uterus and left ovary

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Section: Paediatric radiology

Area of Interest: Genital / Reproductive system female

Procedure: Diagnostic procedure

Imaging Technique: Ultrasound

Special Focus: Hernia Case Type: Clinical Cases

Authors: Maria Helena Valentim, Catarina Costa, Joana Paiva

Patient: 3 months, female

Clinical History:

A 3-month-old girl came to our department for a renal ultrasound for evaluation of a prenatal hydronephrosis. Additionally she had a left inguinal hernia that we were also asked to evaluate with ultrasound.

Imaging Findings:

On renal ultrasound there was no hydronephrosis and both kidneys had normal dimensions and morphostructure.

On pelvic ultrasound the uterus and left ovary were not visualised in its usual position, although the bladder was moderately distended. The right ovary was adequately visualised in its normal position.

On evaluation of the left inguinal region we were able to document the presence of a hernia, which besides some herniated fat contained the left ovary and the uterus. The orifice was relatively large and the hernia could be partially reduced with pressure with the ultrasound probe. The herniated uterus and left ovary had normal ultrasound structure and were adequately sized for the age group.

The diagnosis was confirmed at surgical intervention and the surgeons found no morphological abnormalities that could explain the herniation of pelvic organs.

Discussion:

Inguinal hernias are not uncommon in infant girls and the presence of an ovary in the herniated contents has been reported to occur in approximately 15-31% of cases [1, 2]. However, the presence of a herniated uterus is extremely rare.

A search in the English literature revealed only very few cases of inguinal hernia containing the uterus in young girls [1-4]. There are even fewer cases describing the presence of herniated inguinal uterus in adult women [5-7], sometimes in women with the diagnosis of Mayer-Rokitansky-Kuster-Hauser syndrome who present with a rudimentary herniated uterus.

The presence of the uterus in an inguinal hernia has also been reported in young men with persistent Mullerian duct syndrome [8, 9]. Most of these cases have been found intra-operatively during surgical exploration of inguinal hernias. Although more frequently described than the presence of herniated uterus in female infants, this is also a rare condition with only a few case reports found in the literature.

Indirect hernias are more common in children than direct hernias, resulting from an incomplete closure of the processus vaginalis, which arises as a peritoneal evagination accompanying the round ligament through the inguinal canal towards the labium major at around the 6th month of pregnancy. It usually closes by the 8th month, and

failed obliteration might result in a hernia or a hydrocele of the canal of Nuck (the inguinal portion of the processus vaginalis). Hernias are more commonly found on the right side, as the left processus vaginalis usually closes first. As there is no embryological explanation for the herniation of the uterus, some authors have speculated that an abnormality of the suspensory ligaments of the uterus might account for its presence in an inguinal hernia [10].

An inguinal hernia in female infants usually presents in the first days of life as an asymptomatic palpable mass in the inguinal region. In the presence of the ovary and/or uterus in the hernial sac, the hernia may not be reducible [11]. In fact, herniated ovaries can be found in a large percentage of incarcerated hernias in young girls [1].

Ultrasound is the imaging study of choice in the diagnostic workup of an inguinal hernia in a female infant. As these children must be treated surgically, ultrasound can confirm the presence of an inguinal hernia and characterise its contents, helping in surgical planning.

Differential Diagnosis List: Inguinal hernia containing the left ovary and uterus, Hydrocele of the canal of nuck, Inguinal lymphadenopathy

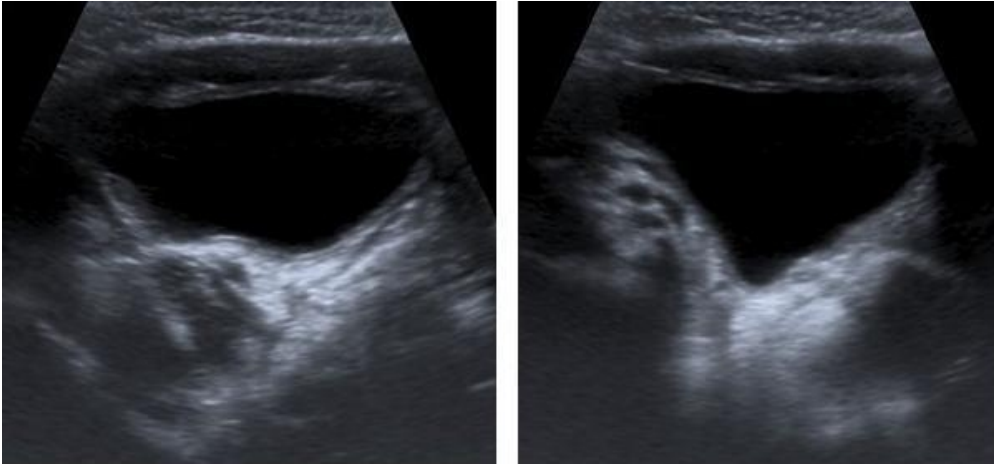
Final Diagnosis: Inguinal hernia containing the left ovary and uterus

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Figure 1

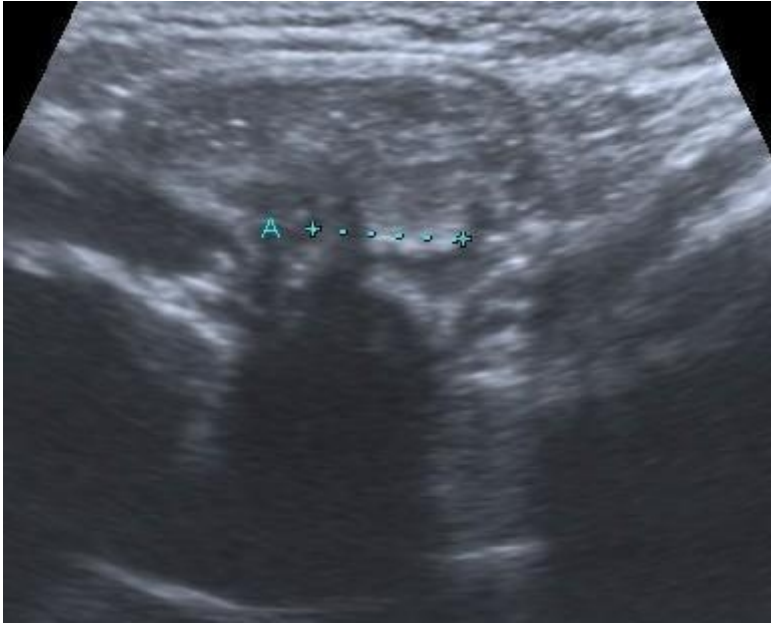
a



Description: On ultrasound evaluation of the pelvic region, the uterus and left ovary could not be visualised, despite the presence of a relatively full bladder. **Origin:** Radiology Department, Hospital de S. Francisco Xavier - CHLO. Lisbon, Portugal

Figure 2

a



Description: Ultrasound evaluation of the left inguinal region revealed the presence of an inguinal hernia with an orifice measuring 8 mm wide (a), containing fat, and also the uterus (b,c) and left ovary (d). **Origin:** Radiology Department, Hospital de S. Francisco Xavier - CHLO. Lisbon, Portugal

b



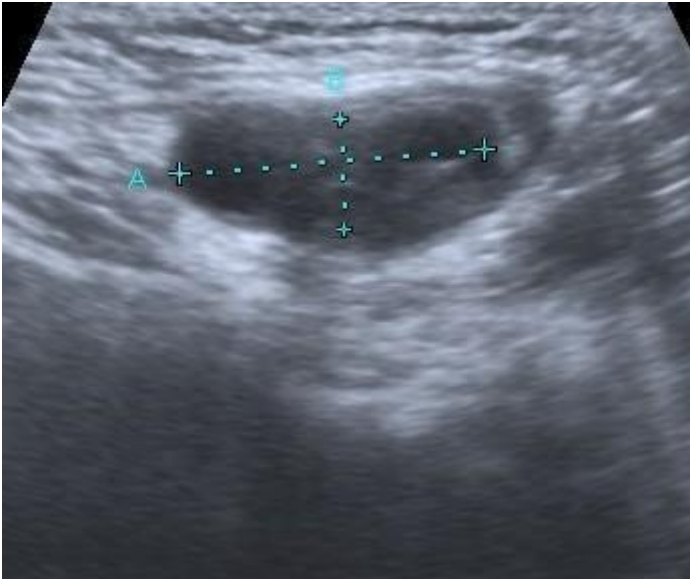
Description: Ultrasound evaluation of the left inguinal region revealed the presence of an inguinal hernia with an orifice measuring 8 mm wide (a), containing fat, and also the uterus (b,c) and left ovary (d). **Origin:** Radiology Department, Hospital de S. Francisco Xavier - CHLO. Lisbon, Portugal

c



Description: Ultrasound evaluation of the left inguinal region revealed the presence of an inguinal hernia with an orifice measuring 8 mm wide (a), containing fat, and also the uterus (b,c) and left ovary (d). **Origin:** Radiology Department, Hospital de S. Francisco Xavier - CHLO. Lisbon, Portugal

d



Description: Ultrasound evaluation of the left inguinal region revealed the presence of an inguinal hernia with an orifice measuring 8 mm wide (a), containing fat, and also the uterus (b,c) and left ovary (d). **Origin:** Radiology Department, Hospital de S. Francisco Xavier - CHLO. Lisbon, Portugal