



## Case 8360

### Newborn female with a right groin lump

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**Section:** Paediatric Radiology

**Published:** 2010, Apr. 12

**Patient:** 1 month(s), female

## Clinical History

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A 1 month old girl presented to the emergency department with a right groin lump and frequent crying. White and red blood cell counts were within the normal range. In addition, the ESR, CRP, liver and renal function tests were also normal.

## Imaging Findings

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A 1 month old girl presented to the emergency department with a right groin lump and frequent crying. The groin lump had appeared on the same day. The baby had no diarrhoea, had normal faeces, normal bowel gas emissions and was not vomiting. Physical examination showed an irreducible right inguinal hernia. White and red blood cell counts were within the normal range. In addition, the ESR, CRP, liver and renal function tests were also normal.

Abdominal and Doppler-ultrasound examinations were performed, and showed bilateral fluid-distention of the inguinal canal. From the ultrasound examination, it was clear that the right inguinal canal also contained the right ovary. Patent right ovarian vessels and normal ovarian perfusion were observed using Doppler ultrasound. Pelvic ultrasound showed that the uterus was placed in lateral position, crossing to the right, approaching the right inguinal canal. The left ovary was in normal pelvic position. Both ovaries had multiple simple follicles from maternal hormonal stimulation. No other abnormalities were observed in the abdomen or pelvis with ultrasound.

## Discussion

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Inguinal hernia is one of the most common surgical pathologies in childhood, although hernia of the canal of Nuck is considered to be a rare condition occurring in female infants [1]. The canal of Nuck is a portion of the processus vaginalis of the peritoneum within the inguinal canal in women. The processus vaginalis is an evagination of parietal peritoneum of the embryonic lower anterior abdominal wall which accompanies the round ligament through the inguinal ring into the inguinal canal. The portion of processus vaginalis within the inguinal canal in women is called 'the canal of Nuck'. Normally, it loses its connection with the peritoneal cavity, but when it fails to close a hydrocele or hernia may result [2, 3, 4].

Any of the abdominal organs can slide into the hernial sac and become incarcerated there. In girls, the fallopian tubes, ovaries, uterus, and-rarely-ovarian cysts can form the sliding component of an inguinal hernia [1].

Little has been published on this condition [5]. Most of the reports are single cases of female newborns 2-5 months-old. However there are also reports in infants and adult patients [6, 7].

The differential diagnosis includes lymphadenopathies, ovarian cyst sliding into the hernial sac, strangulated bowel loop, cyst of the canal of Nuck,

Bartholin's cyst, arterial and venous aneurysms, and malignant or benign tumours [1, 4, 7]. Some case reports suggested that the ultrasound finding of a hydrocele of the canal of Nuck is typically sausage-shaped, extending along the route of the round ligament or a "cyst within a cyst" appearance [8].

However, in our case, hydrocele of the canal of Nuck was found at the left side as a comma-shaped with a surface beak representing a continuation of the peritoneal cavity through the inguinal canal on ultrasound, as documented previously [7].

Inguinal hernia repair is one of the most commonly performed surgical interventions in childhood. Incarceration and strangulation are the most common complications, and patients are usually admitted to the emergency department with nonreducible, painful masses in the inguinal region [1].

The sliding hernia which contains the ovary with or without the fallopian tube occurs occasionally in female patients [9] and can be surgically corrected. If left unreduced, a herniated ovary may be damaged because of subsequent torsion or compression of the ovarian vessels by strangulated bowel in the hernial sac [1]. Ovary in the hernial sac has the risk of torsion and infarction in 27% of all cases. Ovarian cysts may also be detected in the hernial sac. These cysts may become hemorrhagic and may present as painful masses. In this particular patient an elective surgery was planned for hernia repair and ovary relocation as there were no signs of ovary torsion or infarction needing an emergent surgery.

Although sonography is an easy and accurate pre-operative diagnostic procedure [8], inguinal masses in young girls must be carefully evaluated, because the sonographic preoperative diagnosis may be misleading [1]. We agree that sonography should be performed routinely in all female patients with an inguinal hernia containing a palpable mass [9].

## **Final Diagnosis**

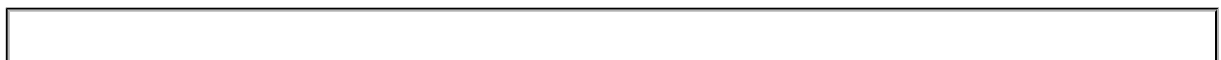
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Female inguinal hernia - hernia of Nuck.

## **Figures**

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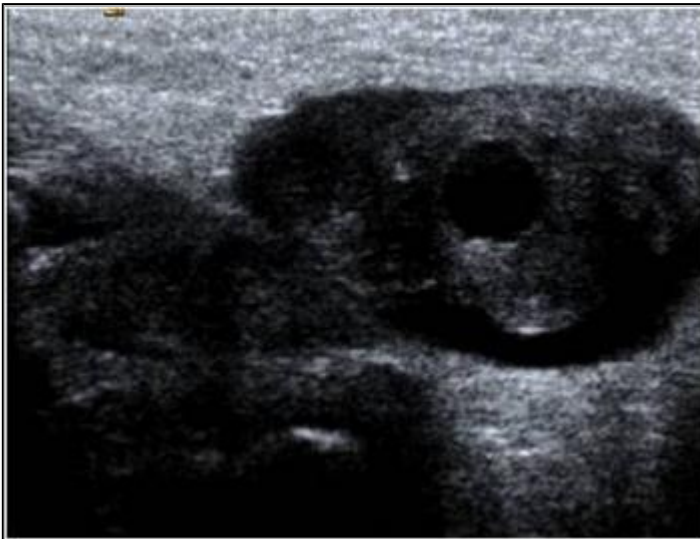
**Figure 1 Left inguinal ultrasound - comma-shaped fluid collection.**





Left inguinal ultrasound - comma-shaped fluid collection.

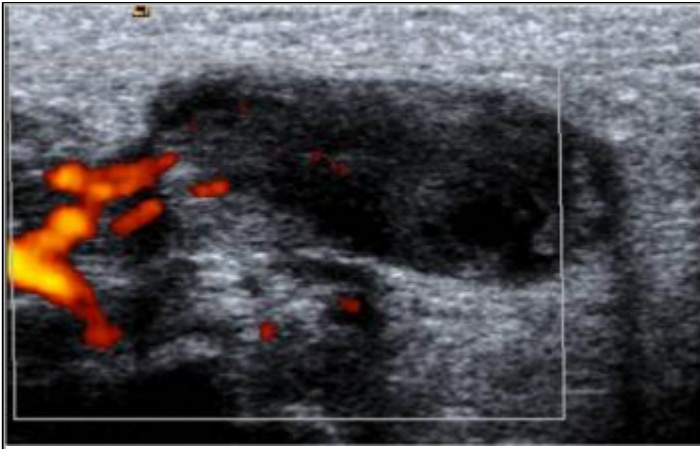
**Figure 2 Right inguinal canal ultrasound and Doppler ultrasound**



Right inguinal canal ultrasound and Doppler ultrasound.

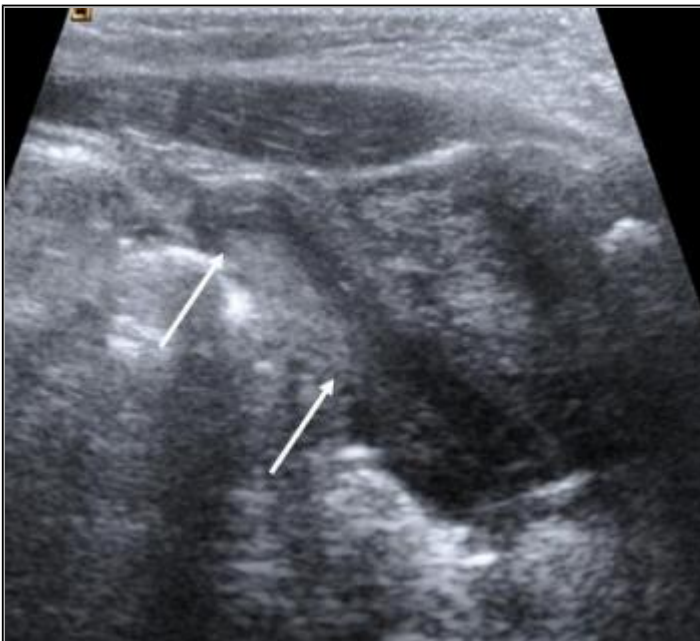


Right inguinal canal ultrasound and Doppler ultrasound.

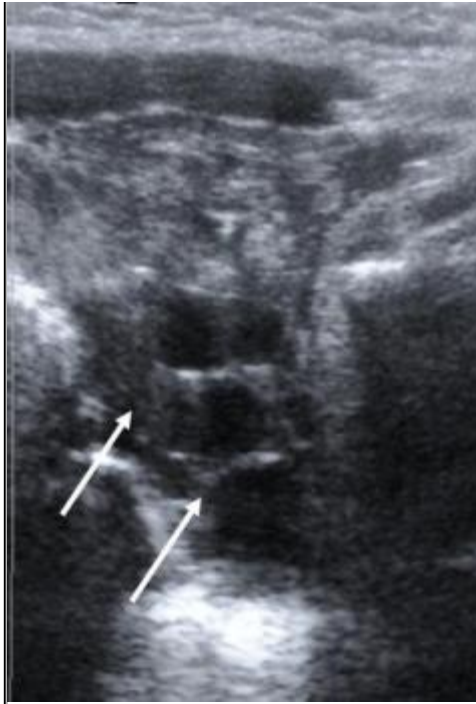


Right inguinal canal ultrasound and Doppler ultrasound with patent vessels.

**Figure 3 Pelvic ultrasound**



The uterus is placed in lateral position, crossing to the right, approaching the right inguinal canal (arrows).



The left ovary is in normal pelvic position (arrows).

## MeSH

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**Hernia, Inguinal** [C23.300.707.875]

## References

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## Citation

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URL: <http://www.eurorad.org/case.php?id=8360>