
CASE REPORT

Ovarian Inguinal Hernia Complicated by Ovarian Torsion

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ABSTRACT

Inguinal swellings are not uncommon in infants. The differential diagnoses of inguinal masses in infants include inguinal hernia, which is one of the most frequently entertained differential diagnoses in both males and females. Due to the greater potential for gonadal involvement which is prone to vascular compromise, early diagnosis and management is crucial to avoid potential future complications.

Key Words: Hernia, inguinal; Infant, newborn; Ovary; Ultrasonography, Doppler, color

中文摘要

卵巢腹股溝疝並卵巢扭轉

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腹股溝腫常見於嬰兒。如果腫塊在腹股溝位置出現，無論男嬰或女嬰，一般的鑒別診斷都包括腹股溝疝。由於腹股溝疝氣往往牽涉性腺而造成血管回流不良，應盡早診斷及治理此病以避免併發症的發生。

CASE REPORT

A 46-day-old girl was admitted in February 2008 with an acute left groin swelling that increased in size when she cried. On examination, there was a 2 cm x 2 cm firm irreducible swelling in the left inguinal region, coursing above and medial to the pubic tubercle. The rest of the abdomen was normal, leading to a diagnosis of irreducible left inguinal hernia. Ultrasound of left groin demonstrated a 2.5 cm x 2.0 cm x 2.7 cm solid oval structure with multiple cysts ranging in size from 1 to 5 mm. The sonographic appearance was compatible with an ovary (Figure 1). The ovary was bulky with an oedematous wall and prominent peripheral cysts, and on colour Doppler its vascularity was diminished (Figure 2). Overall features were compatible with left inguinal hernia complicated by ovarian herniation and torsion. Abdominal ultrasound demonstrated a normal uterus with a normal right ovary in the right adnexa. The baby

girl underwent emergency surgery, whereupon the left ovary was noted in the inguinal hernia and was twisted along its pedicle. Although oedematous and bulky, the ovary was deemed viable and therefore reduced back into the peritoneal cavity and a left inguinal hernia repair was performed.

DISCUSSION

An inguinal mass is a common finding in infancy, and the list of differential diagnoses is extensive. In male infants, undescended testes (with or without torsion), testicular tumour, hydrocele, and inguinal hernia should be considered. In female infants, intestinal inguinal hernia and inguinal hernia containing ovary are the most common causes.¹

The ovary arises from the ventromedial thickening of the mesonephric body. During the second month of

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gestation, this pluripotential gonadal tissue differentiates into the definitive ovary.² During the third month of fetal life, the peritoneum outlining the abdominal wall protrudes into the internal ring to form an outpouching, which is known as the processus vaginalis in males and the canal of Nuck in females. The canal of Nuck follows the round ligament that extends from the ovary to the labia. The processus or canal of Nuck is open in 80 to 94% of full-term infants examined at autopsy. The canal closes within 1 year.³ By definition, a hernia does not exist until some parts of the abdominal contents are pushed into the open sac.^{3,4} The small intestine, bladder, omentum, testes, ovary, fallopian tube, and uterus have all been described within the inguinal canal hernia. In females, the hernia often presents as a non-tender, small, firm groin mass.

In females, approximately 4 to 37% inguinal hernias present with non-reducible ovaries at the time of surgery, of which 2 to 33% are twisted and sometimes infarcted.^{5,6}

An ovary in a hernia is not so much a prolapsed, but a descended, gonad.⁷ Review of the literature shows that an irreducible ovary with its fallopian tube is at significant risk of torsion along its pedicle whilst suspended from the neck of the hernial sac.^{5,6,8} Therefore even an asymptomatic non-reducible ovarian hernia should be treated with urgent manual or operative reduction to avoid an incarceration.⁴ Reduction is successful in 70 to 90% of cases. Surgical repair should be scheduled at the surgeon's discretion once the swelling diminishes.^{9,10}

Ultrasound is an excellent modality for evaluating structural abnormalities of the groin.¹¹ It is a very sensitive, readily available, and safe investigation that provides a definitive diagnosis in the majority of the cases. With the availability of high-resolution

transducers, even superficially located hernial sacs and their contents can be confidently characterised. Concurrent use of colour Doppler depicts the vascularity and can reveal early vascular compromise.

In conclusion, a female infant with suspected inguinal hernia should be thoroughly evaluated to exclude the possibility of ovary as part of its contents. High-resolution ultrasound and colour Doppler often help achieve a definitive diagnosis and the possibility of vascular compromise, and thereby guide clinicians about the need for emergency intervention to salvage gonadal tissue.

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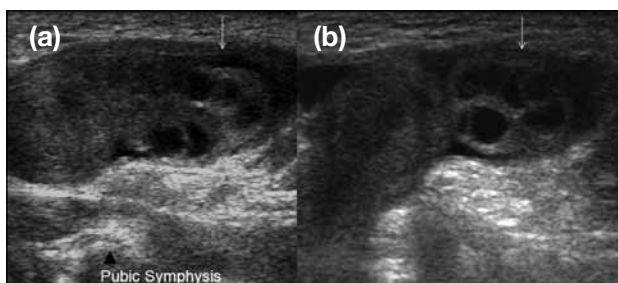


Figure 1. Grey-scale longitudinal image at the left inguinal region shows enlarged oedematous left ovary (white arrows) in connection with the abdominal cavity. Note the bony landmark, pubic symphysis (black arrowhead).

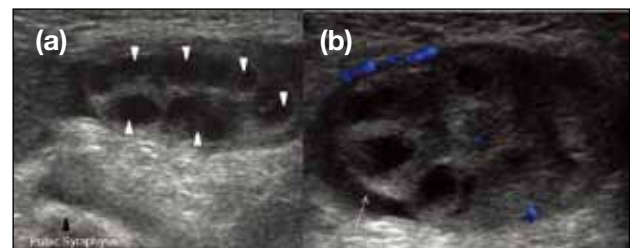


Figure 2. (a) Grey-scale and (b) colour Doppler longitudinal images showing bulky left ovary with multiple peripheral cysts (white arrowheads). Note the oedematous walls (white arrow) and diminished vascularity with mainly slow venous flow at periphery in (b).