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Ovarian torsion in an infant: Clinical case and contribution of medical imaging

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Abstract
We report a case of ovarian torsion in a 3-month-old infant that is extremely rare, severe and a diagnostic and therapeutic emergency. The clinic was nonspecific, represented by crying abdominal pain. The diagnosis was guided by pelvic ultrasound by showing a heterogeneous hypoechoic lateral vein mass with small internal cystic images, without color Doppler flow. The MRI confirmed this by highlighting the ovarian origin of the mass and the twisting of the ovary pedicle hyposignally T2 between the ovary and the uterus. The treatment consisted of conservative surgery.

Keywords: ovarian torsion, infant, abdominal pain, MRI, ultrasound

Introduction
ovarian torsion is an extremely rare cause of acute abdominal pain in infants (1). It is a diagnostic and therapeutic emergency, and clinical diagnosis is difficult. We report a case of ovarian torsion in a 3-month-old infant in order to describe its radiological characteristics.

2. Observation
This was a 3-month-old infant with no specific neonatal, medical or surgical history. His parents took him to the emergency room for crying of abdominal pain by the crisis associated with profuse fluid diarrhea in a feverish context. His signs evolved 20 hours before admission. The physical examination revealed a pain in the right iliac fossa resulting in crying, without palpable mass. There was no other point of infectious appeal on the examination. Biology showed leukocytosis but CRP was negative, and urine was sterile.

An abdominal ultrasound realised after 1 hour and 30 minutes for admission showed a mass of 40 mm transverse diameter, hypoechogene heterogeneous by the presence of small rounded fluid images, at the level of the right iliac fossa, in juxta-caecal without communication with the digestive loops (figure 1). This structure resembled a swollen ovary with small cysts. There was no color signal in Doppler (figure 2). The diagnosis of torsion of the right ovary was suspected and a complementary pelvic MRI was performed.

On MRI, there was an oval formation appearing in hyposignal T2 with several rounded fluid images of different signal suggesting the presence of a few cysts with fluid and hemorrhagic contents (figure 3a, b). The spire image was individualized hyposignally between the uterus and the lesion (figure 4). There was also an attraction of the uterus to the right (figure 5). The neighboring fat was inflamed but there was no fluid effusion in the Douglas.

The infant underwent laparoscopy which confirmed ovarian torsion with conservative treatment consisting of ovarian detorsion and oporiaxia by uterine-ovarian ligament plication. The postoperative course was good, without recurrence of torsion at 5 months of follow-up.

3. Discussion
Twisting of the ovary is rare in pediatrics accounting for 15% of all twists. Of the pediatric cases, only 16% are for infants under one year of age. The mean age of onset is 11 years with increased risk in prepubertal age [2, 3] and a minimum age of 7 months [1].

Healthy ovarian torsion can occur in 55% of pediatric cases [4]. It is due to a relatively long utero-ovarian ligament contrasting with a small uterus causing excessive appendix mobility. Torsion on adnexal pathology such as cystic or dermoid teratoma mainly affects prepubers [2].

Clinically and biologically, the signs are not specific [1-4]. Acute abdominal pain often located in the lower quadrant is the main sign. This pain is often lateralized on the torsion side, which is right in 59.5% [5]. This pain is not radiating nor migrating [2, 3]. The onset of pain is an important element to be clarified because persistent pain since 15h presents an increased risk of necrosis [4]. The pain may be accompanied by a moderate fever [3], which was the case in our study. Our little one has common liquid diarrhea, which has not been reported in the literature. The presence of mass in the pelvic fossa and vomiting have been reported during ovarian torsions [5]. Urine analysis may reveal pyuria without bacteriuria [2]. At NFS, leukocytosis is often observed [1], as in our case.

Imaging poses the diagnosis. Ultrasound is the first-line examination to explore the pelvic area, especially in pediatrics. The signs are not specific; however, it has a detection rate ranging from 46 to 74% [6]. The ultrasound signs in favor are an

enlargement of the ovary, an asymmetry of the ovaries or even an ovarian mass, a heterogeneous aspect, a spiral image, and a pelvic effusion [2, 6]. Doppler signal analysis is important but not suggestive; the presence or absence of a color signal should not be formal as to the viability of the ovary [7].

Ultrasound can be supplemented with pelvic MRI if there is doubt [8], as in our case. MRI, non-irradiating technique, allows to better characterize the ovarian mass, including the presence of haemorrhagic or greasy content. The pathognomonic but difficult to see and inconstant sign is the twist of the ovarian pedicle as a coil between the broad ligament and the fallopian tube. Other signs may also be seen as peripheral follicle displacement due to stromal edema, ovarian medialization, and displacement of the uterus [6, 8].

Imaging also eliminates differential diagnoses in front of an acute abdominal array mainly intussusception, urinary tract infection and appendicitis [1].

Ovarian torsion is a surgical emergency. The time between the beginning of the pain and the diagnosis determines the choice of treatment and the surgical approach. Studies have shown a relationship between the surgical decision and the time interval between the onset of pain and surgery. In the study by Ziv Tsafrir *et al*. [5], this median interval is 20.5 hours and they opted for surgical treatment in 86.4% of cases. In our little one, this interval is 22 hours.

4. Figures

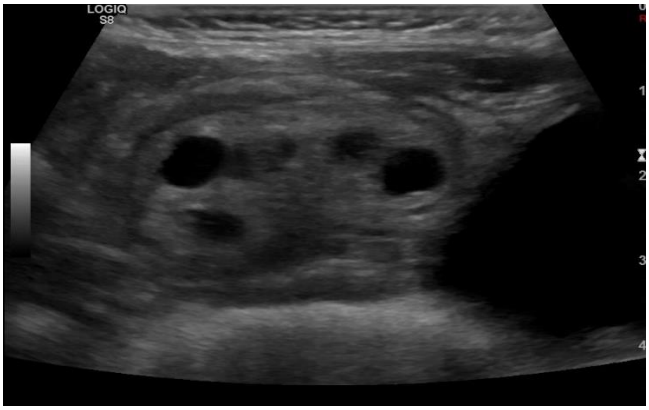

Fig 1: Ultrasonographic section showing a right ovarian mass with some cystic images at the level of the pelvic area in right laterovesical.

Fig 2: Ultrasound section with Doppler showing the absence of vascularization of the right ovarian mass.

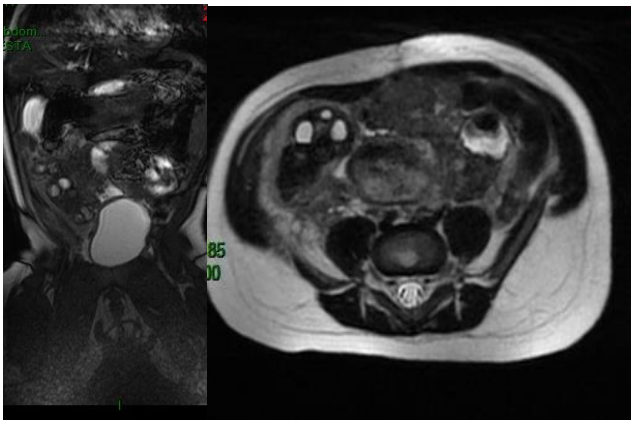

Fig 3: MRI Coronal (a), axial (b) sections showing a right ovarian mass with cystic images of different signal (fluid and hemorrhagic).

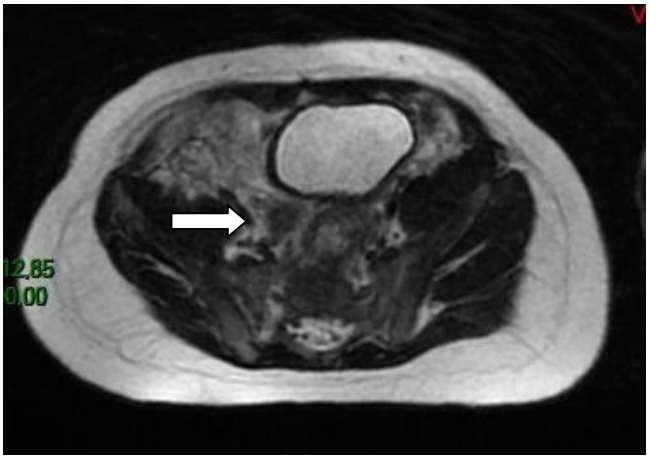

Fig 4: T2 axial MRI showing the hyposignal vascular pedicle (arrow)

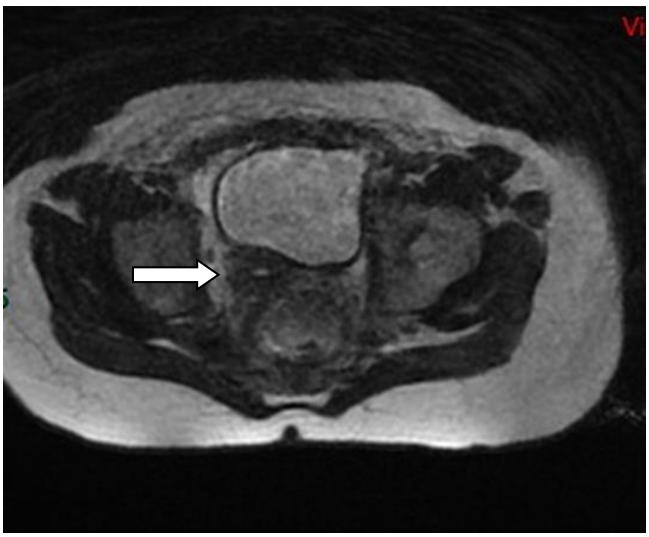

Fig 5: T2-axial MRI showing the deviation of the uterus to the right side (arrow).

5. Conclusions

Ovarian torsion is a surgical emergency that is rare in infants, but it is a problem when pelvic pain is low to avoid complications. Ultrasound and pelvic MRI are essential for diagnosis.

6. References

1. Poonai N, Poonai C, Lim, R Lynch T. Pediatric ovarian torsion: case series and review of literature. Can J Surg.2013; 56(2):103-108.
2. Krista J. Childress, Jennifer E. Dietrich. Pediatric ovarian torsion. Surg Clin N Am. 2017; 97:209-221.
3. Servaes S, Zurakowski D, Laufer MR. Sonographic findings of ovarian torsion in children. Ped Radiol. 2007; 37:446-51.
4. Ziv Tsafrir, Foad Azem, Joseph Hasson, Efrat Solomen, Benny Almong, Hagith Nagar *et al*. Risk factors, symptoms, and treatment of ovarian torsion in child: the twelve- year experience of one center. J Min Inv Gyn. 2012; 19(1):30-33.
5. Meltem Caglar O, Cigdem Ulukaya D, Kaan Masrabaci, Huseyin Murat M, Itir Ebru Z, HamitOkur. Surgical approach to ovarian torsion in children. J Ped Adolesc Gynecol, 2015, 1-5.
6. Wilkinson C, Sanderson A. Adnexal torsion: a multimodality imaging review. Clin Radiol. 2012; (67):476-483.
7. Eun Ju Lee, Hyuck Chan Kwon, Hee Jae Joo, Jung Ho Suh, Arthur C. Fleischer. Diagnosis of ovarian torsion with color doppler sonography: depiction of twisted vascular pedicle. J Ultrasound Med, 17, 83-89.
8. Ovarian torsion in a premenarcheal girl: MRI findings. Van Kerkhove, Cannie M, Op de Beek K, Timmerman D, Pienaar A, Smet MH, Bielen D, *et al*. Abdom Imaging. 2007; 32(3):424-7.