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Amputated Tuba-Ovarian Torsion in a Newborn

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We present the radiological findings of a cystic mass in a newborn which was diagnosed as a cystic-necrotic ovarian cyst and tubal tissue pathologically. In the literature, this is the second case of amputated ovarian torsion cyst with punctate calcifications demonstrated by US and CT. However this is the first case of amputated torsioned tuba-ovarian cyst.

Intra-abdominal cystic lesions are increasingly recognized in the newborn because of the advent of routine antenatal ultrasonography.

Complex neonatal cystic masses with fluid-debris level, multiple septa, internal echoes, and solid component in ultrasound (US) examination are fairly specific for ovarian torsion in female newborns (2). Foci of dystrophic calcifications secondary to hemorrhage have been a well-known histopathological finding of ovarian torsion (2). There is a recent case report in the literature which presents US and CT findings of an amputated ovarian torsion cyst with punctate wall calcification in an 11 month old female infant (3).

We present US and CT findings of an amputated tuba-ovarian torsion cyst. We especially demonstrated wall calcification and wall thickness and discussed an etiologic factor of the unilateral absence of the uterine tuba.

Case Report

Abdominal cystic mass with a diameter of 4 cm was observed in a 34-week- gestation female fetus through antenatal US examination in the obstetrics department of

Celal Bayar University. The mother was treated for ovarian stimulation before pregnancy. Serial ultrasonographic examinations showed that the cyst's diameter did not change.

The baby was born at the 38th -week of gestation. In postnatal radiological examinations; bowel loops were displaced to the right side of the abdomen on plain film (Figure 1). Ultrasonographic examination showed a complex cystic mass in the left side of the abdomen which was 57 x 49 x 49 cm and contained fluid-debris level, thick septa, punctate wall calcification and a thick wall, especially on the posterior side (Figure 2). There was laminal free peritoneal fluid. On CT, similar findings were observed (Figure 3, 4). The cystic mass almost filled the left side of the abdomen and it was at a high localization for a "pelvic mass".

Duplication cyst was excluded due to the absence of mucosal hyperechogenic and muscular hypoechogenic line in cyst wall in US examination. Differential diagnosis included ovarian torsion cyst and ovarian teratoma.

Surgical intervention was performed when she was 6 days old. Exploration revealed the soft, claret red cystic mass and hard, thick, band shaped fibrous tissue near the mass. The mass was not connecting to the uterus, bowel or mesenterium. One pole of the cyst was attached to the antimesenteric side of the small bowel with a very thin, soft and adhesive band. There was no vascular pedicle. The left ovary was absent with a blind-ending left fallopian tube. The right ovary and fallopian tube were normal.



Figure 1. In plain film; bowel loops are displaced to the right side of the abdomen.

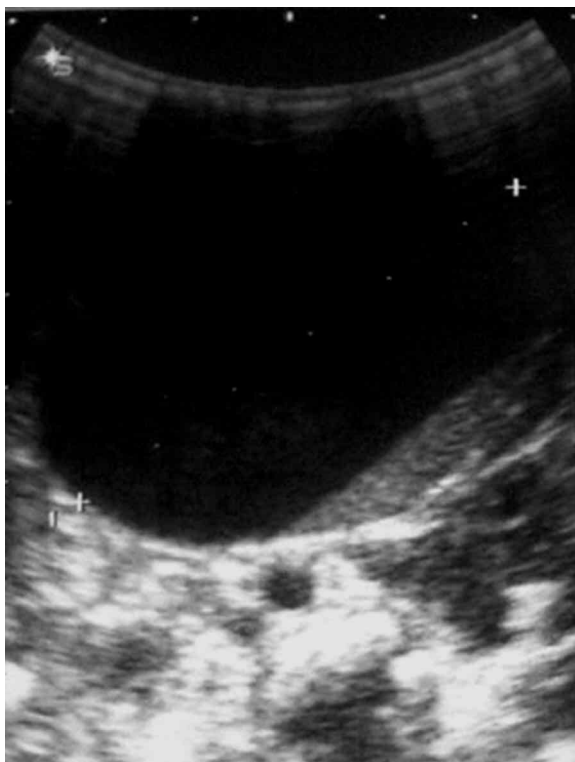


Figure 2. US examination shows the cystic mass.

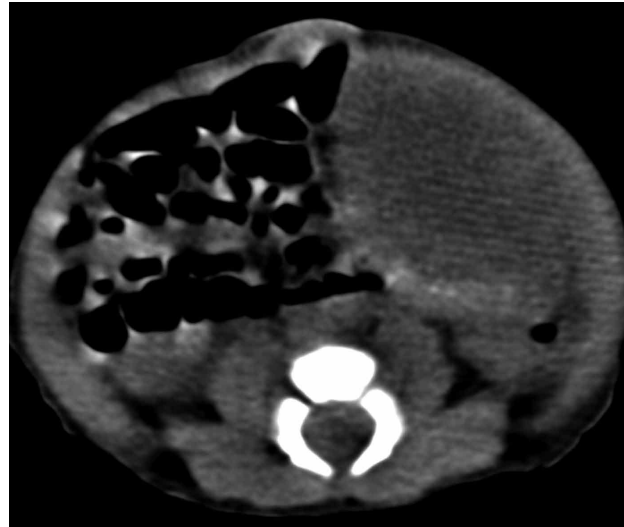


Figure 3. On CT the thick wall and punctate calcifications of the cystic mass are shown.



Figure 4. Coronal plane MPR.

Histological examination demonstrated advanced necrosis with dystrophic calcifications and there were some primordial follicles at the edge of the mass. On the other hand, tubal epitheloid tissue was seen as hard, thick, band shaped fibrous tissue near the mass. The case was diagnosed as tuba-ovarian torsion cyst pathologically (Figure 5).

Ultrasonography is useful in lesion detection during the antenatal period, but diagnostic accuracy is limited, and cannot often differentiate among the various intra-abdominal cystic lesions.



Figure 5. Tuba-ovarian torsion cyst.

The ovarian cyst is the most common intra-abdominal cystic lesion in the female neonate (1). If the ovarian cyst is simple and small in size, it can spontaneously involute within the first few months of life, due to the decrease in maternal hormonal stimulation that occurs after birth and therefore conservative management is preferred (3). However, it is recommended that a large, simple neonatal ovarian cyst (4 cm or more) should be surgically removed since they are prone to torsion (3). Torsion is the most common complication in larger ovarian cysts, and complex ovarian cysts, regardless of size, should be surgically removed, since they predispose to torsion, neoplasm or some other possible complications (2).

Nussbaum's classification of sonographic patterns of ovarian masses helps to differentiate simple from complex ovarian cysts (2). On the basis of the sonographic and pathologic analysis, it is possible to classify each cyst into one of the five following sonographic patterns that are correlated with the presence or absence of cyst torsion or hemorrhage: a)

cyst, b) cystic with a fluid-debris level c) cystic with a retracting clot, d) septated with or without internal echoes, e) solid. The presence of fluid-debris level, retracting clot, septa or solid components suggest torsion or hemorrhage in the cyst but may also represent neoplasm (2,3).

Unilateral absence of a uterine tube is an extremely rare finding, for which there are two possible etiopathogenic causes: in some cases it is due to hemorrhage filling the cavity and its reabsorption as a result of asymptomatic torsion of the uterine tube during adult life, at paediatric age or even during intrauterine life; alternatively, the absence may be congenital, associated with developmental alterations of the mesonephric and paramesonephric ducts (3,4). The other etiopathogenic factor of developing a cyst may be the induction of fetal primordial germinal cells via maternal ovarian stimulation.

This is the second case of amputated ovarian torsion cyst with punctate calcifications demonstrated by US and CT, and in addition, it is the first case of amputated torsioned tuba-ovarian cyst. We considered that a partially thick wall at the posterior side of the cystic mass in radiological imaging might be the amputated tubal tissue. However left ovary and tuba were torsioned all together. In addition, this case indicates that prenatal tuba-ovarian torsion is a possible etiopathogenic cause for unilateral absence of uterine tuba if there is no ipsilateral ovary.

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