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LETTER TO THE EDITOR

A rare cause of acute abdomen in children: a torsioned giant mature cystic teratoma in an 11-year-old girl

Çocuklarda nadir bir akut karın sebebi: 11 yaşındaki kız hastada torsiyone dev ovarial matür kistik teratom

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To the Editor,

Mature cystic teratomas, also known as dermoid cysts, are encapsulated cysts consisting of all 3 germ layers. It was determined that they consist of body system tissues consisting of endoderm, mesoderm and ectoderm. The majority of dermoid cysts are benign; however, only 2% may have malignancy. It can be seen in childhood, mostly in young girls. Rarely, it undergoes torsion, rupture, or infection and may become symptomatic[1].

Ovarian torsion is a rare cause of acute abdominal pain in childhood. After the studies, it was determined that only 3% of all patients complaining of acute abdominal pain were seen in women of reproductive age. 29% of patients were detected only in women under 20 years of age. Ovarian torsion is an important condition that requires early diagnosis, surgical intervention and detorsion to avoid the devastating effects of torsion on the ovaries[2].

In this study, an 11-year-old female patient was admitted to the Pediatric Surgery Polyclinic of our hospital from a private health institution with complaints of colicky abdominal pain and gallbladder (informed consent was obtained from the patient's parents for the case). She was admitted to our hospital for examination and treatment due to her vomiting that had been going on for 2 days. In the abdominal examination of the patient, who was in the premenstrual period, there was significant tenderness in both lower quadrants. During rectal examination, a perirectal mass was palpated on the right. Leukocyte count (17,000 /mm³) and tumor markers AFP and beta HCG were at normal levels. In US (ultrasonography), a solid lesion with a heterogeneous internal structure, 12x9x8 cm in size, located peripherally in the right ovary region, containing millimetric cystic areas was observed (Figure 1).

No flow could be observed in or near the periphery. Middle part of the pelvic mass on Doppler US. Since the patient had severe cramp-like abdominal pain and vomiting, her physical examination was evaluated as acute abdomen and only Doppler US was performed as an imaging method. The patient was taken into surgery under general anesthesia without contrast-enhanced tomography (Figure 1).

During the examination performed through Pfannenstiel incision, serohemorrhagic fluid was detected in the abdomen and 720° clockwise torsion of the right adnexal was detected (Figure 2a,2b,2c). The right ovary was deformed. A sample was taken with a syringe for cytology. The mass in the right ovary was approximately 12x9x8 cm in size and contained cystic and solid components. There were necrotic and occasionally hemorrhagic areas in the right ovary and fimbria. Due to the gangrenous appearance of the ovary, right salpingo-oophorectomy was performed.

Histopathological examination revealed that almost all of the ovarian tissue contained bleeding areas and

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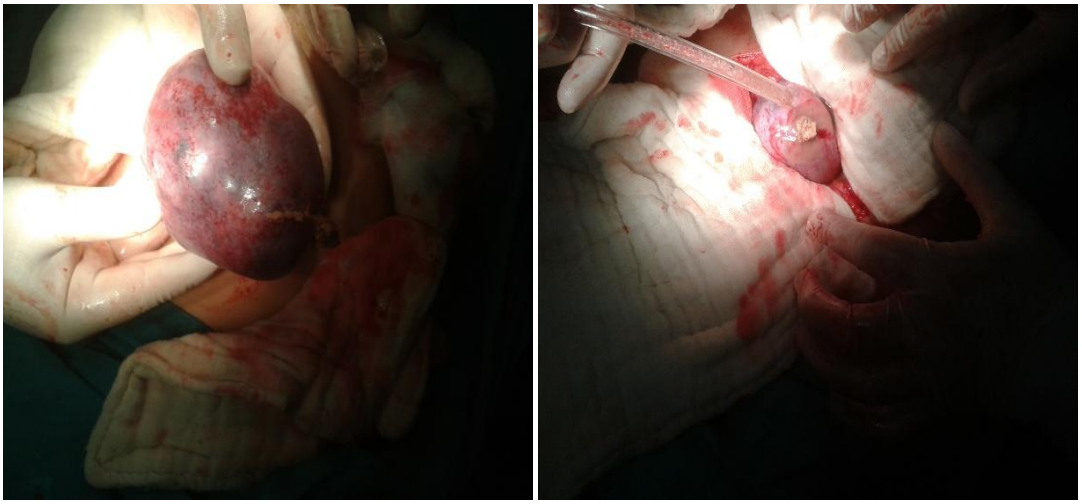
necrosis (Figure 3a,3b,3c). Additionally, histopathological examination reported mature cystic teratoma (dermoid cyst), right salpingo-oophorectomy material and benign cytological findings. The patient was discharged with recommendations on the 5th postoperative day.

Figure 1. Ultrasonography (US) revealed a solid lesion with a heterogeneous internal structure, measuring 12x9x8 cm in size.



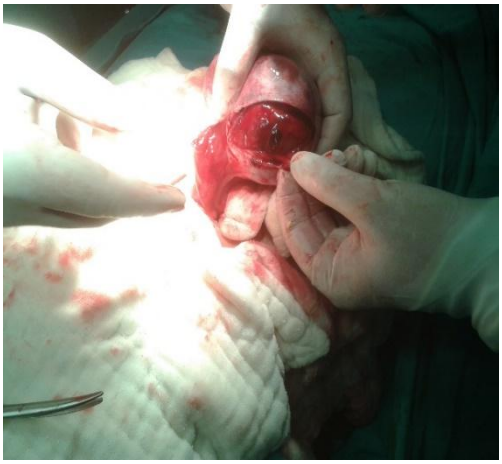


Figure 2. A 12x9x8 cm gangrenous ovarian mass, which was torsioned twice clockwise, and signs of ischemia and necrosis after detorsion, were detected and salpingo-oophorectomy was performed (Figure 2a. Torsioned mature cystic teratoma (A 12x9x8 cm gangrenous ovarian mass, which was torsioned twice clockwise, and signs of ischemia and necrosis after detorsion, were detected and salpingo-oophorectomy was performed.) Figure 2b-2c. Contents of mature cystic teratoma after detorsion).

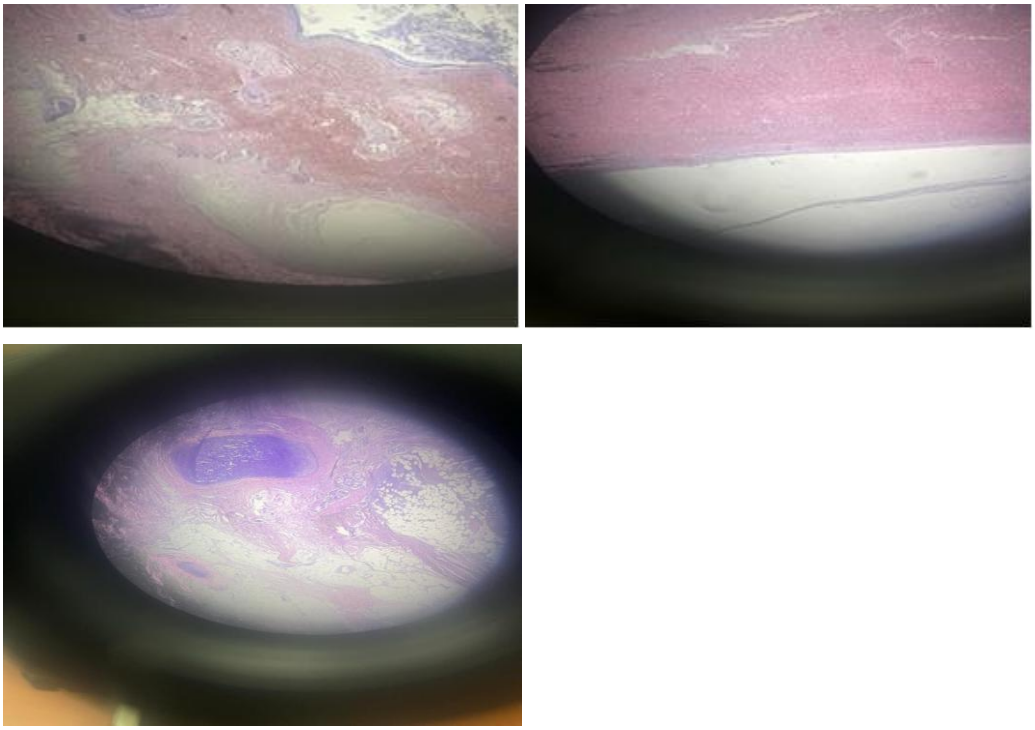


Figure 3. A heterotopic diagnosis. Right torsioned matur cystic teratoma.

Lesions showing images obtained with hematoxylin and eosin (H & E) of biopsy specimens from the teratoma. Figure 3a. Hemorrhage, areas of necrosis and cystic content (original magnification X10); Figure 3b. Squamous cyst epithelium (original magnification X10); Figure 3c. Cartilage and fatty tissue(original magnification X10).

Most ovarian masses seen in childhood, especially during adolescence, do not cause any symptoms and may occur incidentally. Others can be detected by lower abdominal pain, complaints about the gastrointestinal tract or pressure symptoms such as frequent urination and incontinence, constipation, difficulty breathing, hydronephrosis. If the existing mass is not detected in the early stages of adolescence, torsion, bleeding and necrosis may occur in the ovary. Patients present with acute abdominal disorders such as severe abdominal pain and vomiting due to sudden complications such as rupture[3].

After the mass reached very large sizes, torsion occurred and acute abdomen developed, the patient was first referred to a private health center and then to our hospital.

If ischemia and necrosis due to significant tissue blood flow disorder do not occur after ovarian torsion, a surgical method such as cystectomy can be performed[3]. In our patient, the only surgical method to be preferred was salpingo-oophorectomy because the pedicle was torsioned and there was no hard tissue left in the adnexa as a result of necrosis and ischemia.

Our patient was referred to our hospital from a private medical center and after the examinations, surgical treatment was performed because it was too late for medical treatment. It has been determined that the diagnosis of a dermoid cyst in a premenarcheal girl is complicated and delayed. This is an important condition in which the patient's ovarian integrity is disrupted, leading to complications such as torsion and rupture. Therefore, it is one of the differential diagnosis methods that should be taken into account in the preliminary diagnosis when evaluating the clinical condition of the patient. During the operation, detorsion was performed because in addition to the necrotic appearance of the ovary, almost the entire mesosalpinx appeared necrotic due to torsion. Then, after waiting for a while, it was decided to perform salpingo-oophorectomy since the necrotic appearance did not change.

If there is no widespread tissue necrosis or hemorrhage after ovarian torsion, a surgical method such as cystectomy may be considered[4]. However, since our patient had these histopathological findings, salpingo-oophorectomy was the only treatment option due to the lack of functional tissue. Our patient had severe abdominal pain due to ovarian torsion, and since medical intervention was delayed, surgical intervention was needed. As a result, a young girl, especially in early adolescence, who complains of intermittent, cramp-like abdominal pain, especially in the inguinal region below the navel, needs to be evaluated in detail in advance, even if she does not have any signs or symptoms in her history.

Doppler US and lower abdominal contrast-enhanced tomography are important radiological examinations that can be performed in the differential diagnosis of complicated ovarian masses, as in this patient.

Surgical intervention should be performed early to reduce the risk to the patient's future fertility. In this way, we can prevent losing the ovary after infarction that occurs after ischemia and necrosis.

The patient was consulted to the Pediatric Hematology Oncology Department after the surgery and was followed up by checking US and tumor markers every 6 months for 5 years. In the first year of follow-up, the patient complained of pain in the right groin area after salpingo-oophorectomy, and this pain disappeared during follow-up.

During the 5-year postoperative follow-up of the patient, no benign or malignant lesion was found on the other side in the control US. In the differential diagnosis of ovarian torsion, ovarian cyst rupture and acute appendicitis should be considered first.

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REFERENCES

1. Laufer M, Goldstein D. Benign and malignant ovarian masses. Pediatr Adolesc Gynecol 2005;5:685-728.
2. Abbas AM, Gamal E, Talaat E, Sheha AM. Torsion of huge dermoid cyst in adolescent girl: A case report. Middle East Fertility Society J. 2017;22:236-9.
3. Hye Jin Kwon, MD. Torsion of ovarian teratoma in a child before menarche. J Pediatr Surg Case Rep. 2022;77:102170.

4. Katke RD. Torsion of huge cystic teratoma of ovary with multiple fibroids uterus: a case report and review of the literature. Int. J Reprod Contracept Obstet Gynecol. 2014;3:793-5.