# Torsion of a Normal Ovary and Torsion of a Ovarian Tumor Two Different Unusual Cases

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Adnexal torsion is uncommon cause of severe abdominal pain in adolescents and postmenopausal women. We present two cases of ovarian torsion with two different etiologies in a 17-year-old adolescent girl with torsion of a normal ovary and 64 year-old postmenopausal woman with torsion of ovarian tumor. Most cases of ovarian torsion are due to some underlying ovarian pathology that causes ovary to twist around its vascular pedicle. In the first case, we present torsion of a normal ovary in an adolescent girl.

Due to invasion or adherence to adjacent pelvic tissues, malignant ovarian tumors carry only 2% risk of torsion. In the second case, we report torsion of micropapillary type serous borderline ovarian tumor. It is important to keep ovarian torsion in mind in differential diagnosis in young adolescent girls and postmenopausal women with acute abdominal pain. Ultrasound with Doppler imaging is the main diagnostic tool with detailed history and physical exam. Once adnexal torsion is diagnosed, management is surgical. Further researches are necessary to develop methods of determining the viability of the ovary.

Key Words: Ovary, Torsion, Ultrasonography

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## Introduction

Torsion of ovary is a gynecological emergency that requires prompt diagnosis and surgical treatment. Although ovarian torsion is generally accepted as uncommon, studies propose that adnexal torsion is the 5th most common gynecologic emergency, representing 2%-3% of acute surgical emergencies.1 Most cases of ovarian torsion are due to some underlying ovarian pathology that causes ovary to twist around its vascular pedicle. If the rotation is complete and prolonged, venous and arterial thromboses occur, ultimately causing adnexal infarction.<sup>2</sup> Clinically, the detection of an ovarian mass accompanied by abdominal pain which is located in lower abdomen of the affected side leads to suspicion of ovarian torsion. Ultrasonography with Doppler imaging is important in making the correct diagnosis of pain. 93% of patients with ovarian torsion have abnormal sonographic findings.<sup>3</sup> Once adnexal torsion is diagnosed, management is surgical. New

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advances in conservative surgical management have made early diagnosis very important for ovarian salvage.

## Case 1

A 64 year old postmenopausal woman referred to our hospital with abdomino-pelvic mass and severe pain. Nausea and anorexia were present. On abdominal examination, a large mass was visible and palpable extending from the pelvis to above the umbilicus. Pelvic examination revealed the mass which was firm, tender and immobile.

A pelvic ultrasound was performed, showing 25×20 cm complex solid-cystic mass occupying nearly all abdomen (Figure 1). Color Doppler confirmed no flow in or periphery of the mass. As her clinical condition worsened, emergent laparatomy was performed. On laparatomy, adnexal mass was smooth, cystic measuring 25×25 cm with two times torsion around its pedicle (Figure 2). Total abdominal hysterectomy and bilateral sapingo-oopherectomy was performed. As surgery was not being performed in elective condition, we couldn't have performed frozen section. There was, no adhesion or any metastatic areas are visible macroscopically in the pelvis. We performed hysterectomy and bilateral adnexectomy. The histopathological diagnosis was micropapillary type serous borderline tumor. There was non-invasive implant on the left ovary. Peritoneal washing was positive. After pathologic result was obtained, the patient was recalled for proper staging.

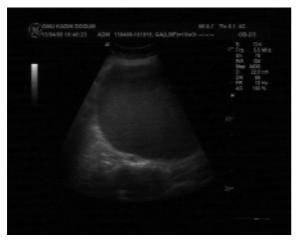


Figure 1: Transabdominal ultrasound image of twisted micropapillary type serous borderline ovarian tumor occupying nearly all abdomen.



Figure 2: Gross appearance of specimen of twisted micropapillary type serous borderline ovarian tumor with a diameter of 25cm x25cm

## Case 2

An 18 year old sexually inactive girl was admitted to emergency depatment complaining of moderate right lower quadrant pain for 3-4 days. She had no nausea but anorexia was present.

Physical examination was normal except right abdominal pain. Her blood test, tumor markers were within the normal ranges. Transabdominal gray-scale scan revealed large, heterogeneous mass lying superior to the bladder measured approximately  $7\times6$  cm (Figure 3). On color Doppler examination, no flow was detected within the mass, but there was minimal arterial and venous flow at the periphery of mass.

She was taken to operation room for laparoscopy with a presumed diagnosis of right ovarian torsion. During laparoscopy the right over and fallopian tube were found to be gangrenous, hemorrhagic and necrotic, twisted two times around its pedicle. After deciding that the right ovary was nonviable, right salpingo-oopherectomy was performed and final pathologic analysis revealed hemorrhagic infarction of the normal ovary and oviduct.



Figure 3: Transabdominal ultrasound image of twisted normal adnexa in 18 year old girl. The ovary is enlarged and containing small follicüles in its periphery.

# Discussion

Adnexal torsion mostly occurs in the childbearing age group, but it is also seen in premenarcheal girls and postmenopausal women.3 Normal ovaries can undergo torsion, but with a much lower frequency than do pathological ovaries. It is proposed that long utero-ovarian ligaments, salpinx and mesosalpinx cause to excessive mobility to a normal adnex.<sup>4</sup> There are no specific ultrasonographic imaging findings in diagnosis of ovarian torsion. Even in the presence of arterial and venous Doppler flow, a pelvic mass can be observed in almost all cases. In early stages of ovarian torsion, the ovary is enlarged with peripheral follicles due to congestion, these cortical multiple follicles has been reported as a specific sign of torsion also present in our second case.<sup>5</sup> Hyperechogenic and hypoechogenic areas may be seen which correspond to hemorrhage and edema respectively.6 Reduced or absence of adnexal vascular flow in affected ovary is suggestive of torsion. A more recent study reported that visualization of the twisted vascular pedicle called 'whirlpool sign' (impaired venous and/or arterial blood flow in the twisted ovarian pedicle) at the sonography might suggest ovarian torsion.7 The tolerable duration for functional preservation of ovarian tissue after adnexal torsion in young adolescent girls has not yet been established. It was suggested that preservation of ovarian tissue possible if surgery was performed within 8 hours after beginning of symptom but it was difficult if surgery was delayed more than 1-3 days after symptom onset.8

In our cases, we aimed to show two different spectrum of

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adnexal torsion in regard to etiology. Detection of an ovarian mass accompanied by abdominal pain which is located in lower abdomen of the affected side should lead to suspicion of ovarian torsion. In most cases, especially in female child and young adolescent girls, adnexal necrosis progresses due to delayed diagnosis, making preservation of the adnexal tissue more difficult.

In conclusion, it is important to keep ovarian torsion in mind in differential diagnosis in young adolescent girls and postmenopausal women with acute abdominal pain. Further research is necessary to develop methods of determining the viability of the ovary.

# Normal Overin ve Over Tümörünün Torsiyonu Over Torsiyonunda İki Farklı Etiyoloji

Adnexial torsion adolesanlarda ve postmenapozal kadınlarda ciddi abdominal ağrının sık olmayan nedenlerinden biridir. Biz 17 yaşında adolesan bir kızda olan normal overin torsiyonu ve 64 yaşında postmenapozdaki bir kadındaki over tümörünün torsiyonunu sunuyoruz. Çoğu over torsiyonu, overe ait bir patolojiye bağlı olarak overin kendi pedünkülü etrafında dönmesi ile oluşur. İlk vakamız, adolesan bir kızda normal bir overin torsiyonudur.

Komşu pelvik dokulara adezyonu ve invazyonu nedeniyle malign over tümörleri sadece %2 torsiyon riski taşır. İkinci vakamız ise mikropapiller tip seroz borderline over tümörünün torsiyonudur. Akut abdominal ağrı ile başvuran adolesanlarda ve postmenapozal kadınlarda over torsiyonu ayırıcı tanıda akla gelmelidir. Doppler ultrasonografi, detaylı anamnez ve fizik muayene tanıda önemlidir. Adnexial torsiyonda tedavi cerrahidir. Overin viabilitesini anlamak için yeni çalışmalara ihtiyaç vardır.

Anahtar Kelimeler: Over, Torsion, Ultrasonografi

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