

# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER  
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

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## Ovarian Torsion

A 23-year-old female with no past medical history presents to the emergency department with sudden onset left lower abdominal pain. She states the pain began during intercourse 2 hours ago and has been continuously worsening. She admits to a few prior episodes over the past year, but never this severe. She describes her pain as sharp, stabbing and radiating to her back and pelvis. She admits to nausea and vomiting, but denies vaginal bleeding. The patient is afebrile and vitals are within normal limits. On physical exam, she has a unilateral, tender adnexal mass on the left side. She is exquisitely tender to palpation without rebound tenderness or guarding. Which of the following tests is most appropriate to diagnose this patient's condition?

- A. Pregnancy test
- B. Pelvic color doppler ultrasound
- C. Visualize directly with laparoscopy
- D. Clinical diagnosis from symptoms alone
- E. Abdominal CT



Ovarian torsion is defined as partial or complete rotation of the adnexa around its ovarian vascular axis, that may cause interruption in ovarian blood flow.

Ovarian torsion represents 2.7% of all acute abdominal pain and is the 5<sup>th</sup> most common gynecologic emergency.

Approximately 60% of ovarian torsions occur on the right side.

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

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## The correct answer is B.

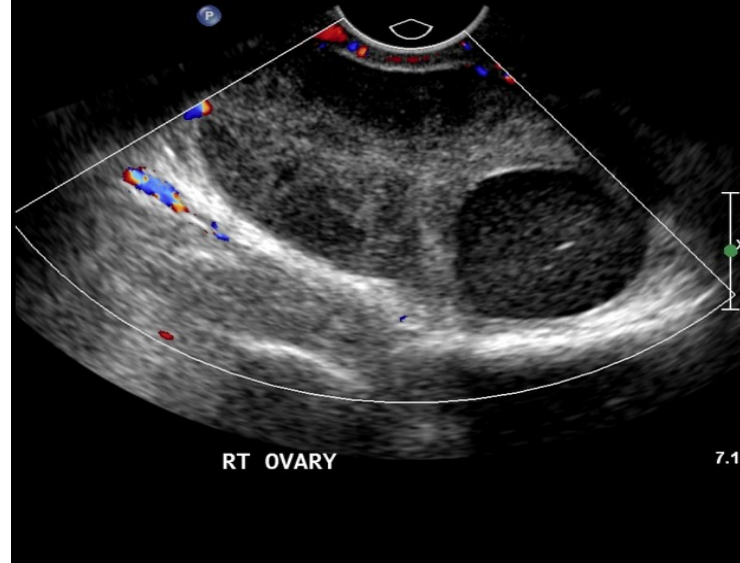
Pelvic color Doppler US is the diagnostic test of choice for ovarian torsion. An ovarian torsion will show little to no intra-ovarian venous flow and absent arterial flow. However, normal vascularity does not exclude ovarian torsion, as it is common for the adnexa to intermittently coil and uncoil. Also, normal flow may be due to collateral blood supply from the ovarian and uterine arteries.

## Discussion

Ovarian torsion involves twisting of the ovarian tissue on its axis leading to reduced venous return, stromal edema, hemorrhage, and infarction. Although torsion may occur in normal adnexa, it frequently arises from anatomic changes such as cysts, teratomas, and other masses.

Ovarian masses larger than 4-6cm are found in 50-60% of torsions. Dermoid tumors are most common. Malignant tumors are much less likely to result in torsion than benign tumors because of the presence of cancerous adhesions fix the ovary to surrounding tissues. Conversely, patients with a history of pelvic surgery are at increased risk for torsion because of adhesions that provide a site around which the ovarian pedicle may twist.

Pregnancy is associated with approximately 20% of adnexal torsion cases secondary to the ovarian enlargement during ovulation, a large corpus luteum cyst and/or laxity of the supporting tissues of the ovary.



## Prognosis and Treatment

Many patients with ovarian torsion have a delayed diagnosis due to non-specific symptoms, often resulting in infarction and necrosis of the ovary. The ovarian salvage rate has been reported below 10% in adults but as high as 27% in pediatric patients. Although the loss of a single ovary is unlikely to result in significantly reduced fertility, and no cases of death due to ovarian torsion have been reported, early diagnosis allows conservative laparoscopic treatment and reduction in complications.

Surgical treatment includes laparoscopy to unravel the torsed ovary and possible oophoropexy to fixate the ovary to avoid future torsions. In extreme cases where blood supply is cut off for an extended time period and necrosis has occurred, the ovary must be removed to prevent infection.

For a list of educational lectures, grand rounds, workshops, and didactics please visit [BrowardER.com](http://BrowardER.com) and click on the "Conference" link.

*All are welcome to attend!*

### Table 3. Possible Ultrasound Findings In Ovarian Torsion

Finding	Comment
Adnexal mass	Especially if > 5 cm
Enlarged, heterogeneous ovary	Average diameter is 2.3 times the size of normal contralateral ovary Ovarian volume < 20 mL has strong negative predictive value
Multiple peripheral cortical follicles	May also be seen on CT or MRI
Ipsilateral uterus deviation	Limited sensitivity and specificity
Abnormal Doppler flow	Not sensitive, but may have prognostic value (see discussion on page 6)
Whirlpool sign	Pathognomonic, but often not seen Requires expertise on part of sonographer

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging; OT, ovarian torsion.

### Take Home Points

- Ovarian torsion is a **surgical emergency!**
- Diagnostic test of choice is pelvic color doppler ultrasound
- Treatment is surgical detorsion with possible fixation
- Necrotic ovaries must be removed



#### ABOUT THE AUTHOR

This month's case was written by Sarah Goodheart. Sarah is a 4<sup>th</sup> year medical student from NSU-COM. She did her emergency medicine rotation at BHMC in March 2017. Sarah plans on pursuing a career in OBGYN after graduation.

#### REFERENCES

Anderson, Jennifer MD. Urgency and Evaluation of Acute Ovarian Torsion in Pediatric Patients. *Arch Pediatric Adolescent Med.* 2005;159(6):532-535.

Schraga, Erik MD. Ovarian Torsion Clinical Presentation and Pathophysiology. *Medscape Online.* Updated 1/24/17.

Laufer, Marc MD. Ovarian Torsion; Pathogenesis, Prognosis and Treatment. *UpToDate.* 11/20/15.