EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE

BROWARD HEALTH Care Warriors

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Testicular Torsion

A 14-year-old male with no past medical history presents to the ED with severe left sided scrotal pain for 1 hour. He first noticed the pain when he was getting ready for school. He rates the pain as 10/10. The pain is constant and does not radiate. He denies any trauma to the testis. He claims nothing makes the pain better or worse. He also repots one episode of vomiting on his way to the ED. He denies hematemesis, abdominal pain, fever, SOB, chest pain, or dysuria. He has never experienced these symptoms prior to this episode. Patient is afebrile and the vitals are within normal limits. Patient appears to be in severe distress. On physical exam, the left testis is swollen, retracted, and lies horizontally. The testis is tender upon palpation. Upon elevation of the testis the patient denies pain relief. The cremasteric reflex is absent Which of the following is the most appropriate initial diagnostic test for this patient's condition?

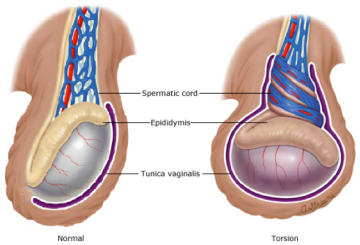
A. Urinalysis

B. CBC and CMP

C. CT of testis

D. Doppler Ultrasound of testis

E. Radionuclide Scan



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Torsion of Spermatic cord

Testicular Torsion occurs when the testis twists along with the spermatic cord. This is a urologic emergency.

The figure on right illustrates the twisting of the spermatic cord and horizontal lie of the testis.

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.

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The correct answer is D. Doppler Ultrasound of the testis.

Testicular torsion is a condition in which the testis twists on the spermatic cord due to the absent or incompetent attachment of the testis and tunica vaginalis.[1] Consequently, there is an obstruction of blood flow to and from the testis. Therefore, the treatment aims to restore the blood flow to ensure that the testis is not deprived of blood for too long.

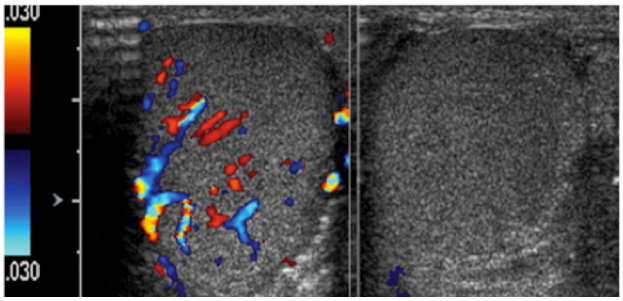
Presentation

Testicular torsion is a common urologic emergency that usually presents itself in neonates and post-pubertal males.[1] The patient usually presents with a chief complaint of pain in the scrotal or lower abdominal region. The pain can occur after minor trauma to testicle, physical activity, or even at rest. The pain can also be associated with nausea or vomiting. Upon visualization, the testis appears swollen, erythematous, and high-riding. A bell-clapper deformity is also present in which the testis lies horizontally. If a tender knot above the testis is palpated, then, the diagnosis of torsion is very likely.

The cremasteric reflex should also be assessed to rule out other diagnosis. To test cremasteric reflex, gently stroke the upper thigh skin that is ipsilateral to the affected testis. A positive reflex is when the testis elevates when the skin is stroked. However, in testicular torsion, there is an absence of the cremasteric reflex so the testis will not elevate.

Diagnosis

In cases where testicular torsion is highly suspected, a Doppler ultrasound should immediately be obtained.[1] The ultrasound should assess the blood flow to the testis, and follow the spermatic cord up to the internal ring. The ultrasound of the unaffected testis will show adequate blood flow, while, the affected testis will show absence or diminished blood flow.



Reprinted from EPOS[2]
Doppler Ultrasound of the bilateral Testis

The image on the left shows a normal testis with adequate blood flow. The image on the right shows an absence of blood flow indicating the presence of testicular torsion.

Distinguishing conditions responsible for acute scrotal pain in adults

	Symptom onset	Pain location	Cremasteric reflex	Other clinical findings
Appendiceal torsion	Acute or subacute	Upper pole of testis	Positive	Blue dot sign
Epididymitis	Acute or chronic	Epididymis	Positive	Positive urinalysis, urine culture, or diagnostic tests for gonorrhea or *Chlamydia* infection
Fournier's gangrene	Acute	Diffuse	Positive	Tense edema outside of involved skin, blisters/bullae, crepitus, fever, rigors, hypotension
Testicular torsion	Acute	Testis	Negative	High-riding testis, bell clapper deformity, profound testicular swelling

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This chart shows how to rule out other possible diagnosis that can also cause scrotal pain. One of the important signs that indicates testicular torsion is the absence of cremasteric reflex. In appendiceal torsion, epididymitis, and fournier's gangrene the reflex is present. Additional workup for diagnosis and surgical management of testicular torsion includes obtaining CBC, CMP, urinalysis, and urine culture.

For a list of educational lectures, grand rounds, workshops, and didactics please visit ***BrowardER.com*** and **click** on the ***"Conference"*** **link**.

All are welcome to attend!

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Treatment

The treatment focuses on restoring the blood supply within 8 hours to avoid necrosis of the testis and infertility.[1] Therefore, testicular detorsion is essential to restore the blood flow. Additionally, the underlying reason for torsion is inadequate attachment of the testis and tunica vaginalis, thus, a surgical fixation of testicle (orchiopexy) is required to prevent further torsion. While waiting for the surgery to happen, a manual detorsion of the testis should be done.

In testicular torsion, the testis can twist 180-720 degrees. In manual detorsion, the testis should be rotated towards the thigh in 180 degree intervals. Multiple attempts to detorse the testis can be done. The patient will experience a pain relief if the detorsion is successful. In detorsion, analgesics are usually not given to assess if the patient experiences a relief. Additionally, upon detorsion the testis returns to its vertical orientation and the swelling decreases. Lastly, a repeat Doppler ultrasound should be done to assess if the blood supply has been restored. Even if the detorsion is successful, a surgical fixation is still vital to fix the defect and ensure that the testis does not twist again.

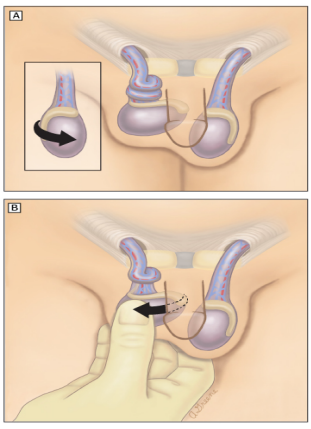

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Figure A shows the inward rotation of the testis during testicular torsion. Figure B shows the manual detorsion procedure in which the testis is twisted outwards.

Prognosis

If the proper treatment is given within 8 hours, then the testis can be saved and infertility can be avoided.[1] Moreover, the quicker the patient is taken to surgery the better the prognosis. Thus, the proper timing of all the events is very crucial. Furthermore, adults have a greater degree of torsion; thus, they have worse prognosis than children.

Take Home Points

- Testicular torsion is a urologic emergency that requires immediate diagnosis and treatment.
- Swollen, high-riding testicle, horizontal orientation of testis, and absence of cremasteric reflex are strong indicators of testicular torsion.
- Doppler Ultrasound of the testis is the best initial diagnostic test.
- The Doppler will show a decrease or absence in the blood flow to the testis.
- Treatment focuses on detorsion and orchiopexy within 8 hours to avoid necrosis.

ABOUT THE AUTHOR

This month's case was written by Kanan Patel. Kanan is a 2nd year PA student from NSU. She did her emergency medicine rotation at BHMC in January 2020. Kanan plans on pursuing a career in Internal Medicine after graduation.

REFERENCES

1. Eyre R. Evaluation of acute scrotal pain in adults. UpToDate. https://www.uptodate.com/contents/evaluation-of-acute-scrotal-pain-in-adults. Published 2019. Accessed January 27, 2020.
2. E. O'Dwyer, The role of ultrasound in testicular torsion: are there any reliable imaging signs? EPOS. https://posterng.netkey.at/esr/viewing/index.php?module=viewing_poster&task=viewsection&pi=143995&ti=515996&si=1720&searchkey. Published January 12, 2018. Accessed January 27, 2020.