Testicular Torsion

Testicular torsion is sudden twisting or rotation of the spermatic cord and vascular pedicle around itself within the scroum. Testicular torsion can happen at any age but most commonly affects neonates and adolescents. A particular rounded shape of the tunica vaginalis can increase the risk of testicular torsion. This anatomic variant is called a bell clapper deformity. Clinical features include severe, acute testicular/scrotal or lower abdominal pain, an abnormal testicular position (e.g. high riding or transverse lie), and nausea/vomiting. Diagnosis is usually clinically but a doppler ultrasound of the scrotum can be used in equivocal cases. The treatment for testicular torsion is emergent surgical intervention. Sometimes, manual detorsion can be used in the emergency room while the OR is preparing for the surgery. Complications of testicular torsion include testicular infarction which can cause long-term infertility in males.



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Characteristics

Sudden Twisting of Spermatic Cord

Twisted Testis Brothers

Testicular torsion is the sudden twisting or rotation of the spermatic cord and vascular pedicle within the scrotum. It is considered an urological emergency as there is a risk of ischemia and possible infarction of the testis, making it one of the most dramatic and potentially serious of the acute processes affecting the scrotal contents.

Affects Neonates and Adolescents

Neon-baby and the Doll-Scent Adolescent-boy

There are two types of testicular torsion depending on compromise of the tunica vaginalis. Neonatal testicular torsion occurs prenatally and up to 30 days after delivery and it usually involves the entire testicle, including the tunica vaginalis as it is still not fixed to the scrotal wall in this population. On the other hand, the most common type of testicular torsion is intravaginal and affects young men during puberty. The peak incidence is between 12 to 18 years of age. Intravaginal testicular torsion occurs due to abnormal fixation of the lower pole of the testis to the tunica vaginalis, allowing the testis to twist.

Bell Clapper Deformity

Bell with Bell Clapper Testis

The bell clapper deformity is the most common anatomic abnormality associated with testicular torsion. It occurs when the testicle is not well adhered to the pouch which surrounds it known as the tunica vaginalis. This deformity allows the testis to twist on the spermatic cord, called intravaginal torsion. It can lead to venous compression, edema and finally ischemia of the testicle.

Clinical Features

Severe Acute Testicular Pain

Acute-angle Pain-bolts

Testicular torsion is characterized by an acute onset of generally unilateral, severe testicular or scrotal pain, usually less than 12 hours in duration, which may radiate to the lower abdomen. The pain is constant unless the testicle is torsing and detorsing.

Abnormal Testicular Position

Abnormal Testicular Breakdance Position

Diagnosis is mainly clinical, therefore physical examination in these patients is of great importance. Clinical findings include an edematous and erythematous scrotum. The affected testis is usually tender, swollen, and slightly elevated because of shortening of the cord from twisting, known as a high-riding testis. The testis lie vertically or tranverse depending on the twisting. The cremasteric reflex (elevation of the testis in response to stroking of the upper inner thigh) is absent and normally there is a negative Prehn sign (pain relief with elevation of scrotal contents which would otherwise suggest epididymitis).

Nausea and Vomiting

Vomiting

90% of patients present with nausea and vomiting.

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Diagnosis

Doppler Ultrasound of the Scrotum

DJ Dope Ultra Beat

Imaging with Doppler ultrasound of the scrotum is not routinely indicated but may be considered in patients with inconclusive clinical findings. It may show decreased testicular perfusion or twisting of the spermatic cord. However, due to the significant risk of infertility from loss of testicular blood flow, diagnostic workup should never delay the management of suspected testicular torsion.

Treatment

Emergent Surgical Intervention

Emergency surgeon

Prompt surgical exploration is crucial to manage testicular torsion, ideally within 6 hours of symptom onset. Surgical management with detorsion and bilateral orchiopexy (fixation of the testicles) in case of viable testes is essential. In case of non-viable testes, orchiectomy should be performed with contralateral orchiopexy.

Manual Detorsion

Manually Untwisting Testicles

Manual detorsion should be attempted if surgery is not immediately available. This involves grasping the testicle and twisting it medially to laterally (like 'opening a book') to attempt to unwind the twisting. If this fails, an attempt at twisting in the opposite direction can be attempted.

Considerations

Testicular Infarction

Testicular Infarction-fart

The main complication of testicular
torsion is the ischemic process which ends up in a non-viable, infarcted and later necrosed testis, which has to be removed from the scrotal sac. This dramatic outcome has serious reproductive and psychologic consequences.

Infertility in Males

Infertile Male-plant

A testicular torsion ending in a non-viable testis, significantly increases the risk of infertility. Therefore it is mandatory to surgically fix the contralateral testis to the tunica vaginalis in order to prevent a future contralateral testicular torsion.

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