

Cryptorchid testis with torsion: Inguinoscrotal whirlpool sign

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ABSTRACT

Non contrast helical computed tomography (CT) study of the abdomen is frequently performed in evaluation of suspected ureteric colic. We present CT images of a young adult male patient who had torsion of an undescended, non-neoplastic testis and describe the “Inguinoscrotal whirlpool sign on CT”.

Key words: Cryptorchid testis, noncontrast computed tomography, torsion, twisting

INTRODUCTION

Torsion is a known complication of cryptorchid testis. Although ultrasound with color Doppler is the most commonly used imaging modality, torsion of undescended non neoplastic testis in an adult may be identified using non contrast computed tomography (CT) using the “Inguinoscrotal whirlpool sign on CT.”

CASE REPORT

A 30-year-old male with acute abdominal and left groin pain for 2 days was referred for CT scan with a clinical diagnosis of ureteric colic. The patient had no hematuria. There was no significant past medical history. Clinical examination of the abdomen showed no abnormality. Scrotum was not examined initially. Laboratory investigations were normal. Non-contrast spiral CT of the

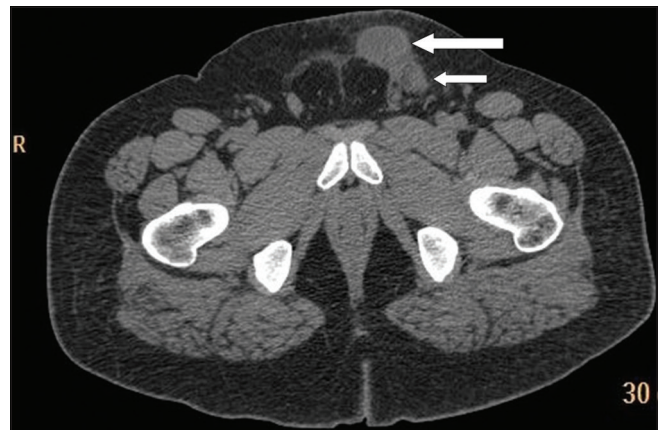


Figure 1: Axial non contrast computed tomography shows cryptorchid left testis in the left inguinal canal (long white arrow) and adjacent proximal soft tissue representing twisted cord (short white arrow)

abdomen revealed no renal/ureteric calculi. An ovoid hypodense structure measuring 3.8 cm × 2.5 cm × 2.6 cm was noted in the left inguinal region with serpentine twisting soft tissue density structures proximal to it [Figures 1, 2, and Video 1], prompting the diagnosis of torsion of the undescended left testis. Intraoperatively, ischemic testis with ~ 360° rotation was noted. The testis was removed, and it showed no malignancy. Orchiopexy was done on the right side.

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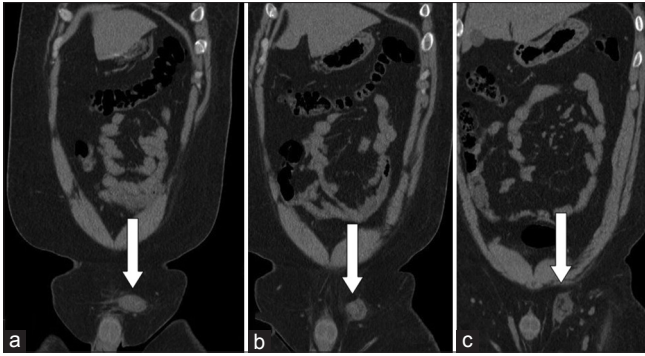


Figure 2: (a) Coronal reformat of non contrast computed tomography shows cryptorchid left testis in the left inguinal canal (white arrow). (b and c) Serpentine twisting soft tissue density structures proximal to it representing twisted spermatic cord (white arrows)

DISCUSSION

Cryptorchidism, failure of intra-abdominal testes to descend into scrotal sac, has an incidence of 3.7% at birth and declines to about 1% by 1 year.^[1,2] Complications of cryptorchidism include testicular cancer, inguinal hernia, torsion, and infertility.^[3] The most common symptom of testicular torsion is scrotal pain. In cryptorchid testis, diagnosis is difficult because of the lack of classical scrotal pain. Torsion of undescended testis classically occurs during the perinatal period and is considered unlikely after infancy. Although the incidence of torsion is higher in cryptorchid testis, there are only isolated reports of torsion of undescended testicle.^[4]

Ultrasound with color Doppler is the most commonly used imaging modality in suspected testicular torsion. Scintigraphy and magnetic resonance imaging (MRI) may be helpful, but are not widely used.^[1] Testicular torsion implies venous obstruction first and arterial flow obstruction later. The extent of testicular ischemia depends on the degree and duration of torsion. Testicular salvage is more likely if treated within 6 hours of torsion onset.^[1] In our case,

torsion was diagnosed based on the twisting appearance of serpentine soft tissue density structures in the inguinal canal, just before the cryptorchid testis, which may be called “Inguinoscrotal whirlpool sign on CT.” This is based on the direct extension of “real-time whirlpool sign” on color Doppler described as the most definitive sign of torsion with 100% specificity and sensitivity.^[5] This appearance may be demonstrated more exquisitely on CT as well as MRI console. Soft tissue edema and altered density are seen in inflammatory testicular conditions also, but whirlpool appearance is absent. It is essential for the radiologists to recognize “Inguinoscrotal whirlpool sign on CT” which clinches the diagnosis of testicular torsion. This case also emphasizes the importance of examining scrotum and groin in all patients with acute abdomen pain.

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Conflicts of interest

There are no conflicts of interest.

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