

Torsion of the undescended testis detected by ^{99m}Tc testicular scintigraphy: a case report

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Abstract

We reported a case of torsion of the undescended testis in a 9-month-old boy which was diagnosed with ^{99m}Tc testicular scintigraphy. The scan showed diffuse increased activity in the location of the undescended testis and no photopenic area was visible. At surgery, torsion of the undescended testis was detected and fixed.

KEY words: testicular scintigraphy, undescended testis, torsion, ^{99m}Tc pertechnetate

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Background

Cryptorchidism is defined as the absence of at least one testis in the scrotum. The prevalence of cryptorchidism at birth is 2–9% with marked geographic variations. Risk factors include genetic predisposition, pre-term birth, low birth weight and prenatal exposure to hormones or smoking in the parents [1–3].

Testicular torsion is a urologic emergency. Although the incidence of torsion in an undescended testicle is unknown, one study showed that torsion is 10 times more common in undescended testes as compared to the testes in the normal anatomical location [4]. The clinical symptoms of undescended testis torsion include abdominal pain, poor feeding, vomiting, and restlessness. Physical examination findings include inguinal swelling and redness with a painful mass in the inguinal region.

We reported a case of acute torsion of an undescended testis which was diagnosed by testicular scintigraphy.

Case report

A 9 month old boy admitted with a history of agitation, inconsolable cry, poor feeding and left inguinal mass for 13 hrs. There was no history of fever and vomiting.

On physical examination, right testis was normal; left testis was not in the normal scrotal location and the left inguinal region was swollen and a firm tender mass (3 × 4 cm) could be palpated.

Laboratory tests were normal except for a leukocytosis. Ultrasonography revealed hypoechogenicity and heterogeneity of the parenchyma in the involved testis (3.5 × 2 × 3 cm) compared to the contralateral normal one. Edema was seen in the peritesticular tissue of the undescended testis. Doppler ultrasonography was not performed.

An emergency testicular scintigraphy was performed with IV injection of 5 mCi (111 MBq) of ^{99m}Tc pertechnetate. The perfusion phase (5 second/frame, for 2 minutes using a dual head variable angle gamma camera (E.CAM Siemens) equipped with a low energy high resolution collimator and ^{99m}Tc photopeak) demonstrated increased arterial flow in the left inguinal mass (arrows in Figure 1).

Static imaging (5 minute Ant view, immediately after dynamic imaging) showed increased tracer uptake in the left undescended testis (arrow in Figure 2) without any photopenic area. Although this pattern suggested an inflammatory process, due to suspicious of torsion patient underwent surgical exploration.

Surgical exploration was performed through an inguinal approach. An ischemic and swollen left undescended testis was found that after detorsion and heating, the color of testis was improved and immediately became bright pink. Involved testis was saved and orchidopexia was performed for undescended testis as well as the contralateral one.

Discussion

Rapid diagnosis of testicular torsion is critical to preserve fertility. Imaging studies such as Doppler ultrasonography, and technetium

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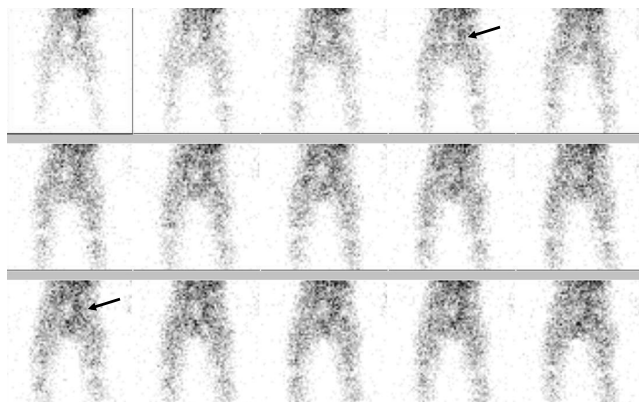


Figure 1. Perfusion phase of the study. Arrows show increased flow to the undescended testis



Figure 2. Static image of the study. Arrow shows increased activity in the undescended testis without any photopenic area

^{99m}Tc scrotal scintigraphy can be of use in the rapid diagnosis of testicular torsion [5–7]. Although testicular scintigraphy is an accepted method for evaluation of testicular torsion, experience on torsion in undescended testis is insufficient. Testicular scintigraphy has been used for detection of testicular tissue in the inguinal canal in the patients suspicious of undescended testis [8]. In addition, several studies reported the scintigraphy findings in missed torsion of the undescended testis. They all reported photopenic area in the inguinal area with a rim of increased uptake [9–11]. However,

diffuse increased activity in the inguinal area without a photopenic area cannot rule out the possibility of torsion in the undescended testis as reported by Erdogan et al. and Dravid et al. [12, 13]. Our case also showed the similar finding as no photopenic area was noticed in the inguinal area despite surgically-proven testicular torsion. In conclusion, testicular scintigraphy can be of use in detection of torsion in cryptorchidism. Diffuse increased activity without any photopenic area can be the only sign of torsion in testicular scintigraphy of cryptorchidism.

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