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Case report

Torsion of undescended testis: Clinical, imaging, and surgical findings

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ABSTRACT

Torsion of undescended testis located within the inguinal canal is a rare entity, represents a surgical emergency, and must be dealt with immediately. We present a case of torsion of undescended testis in a 44-year-old man, who had progressive left inguinal pain for 2 days and in whom surgical exploration showed a twisted gangrenous testis. Orchiectomy was performed and pathological examination confirmed the diagnosis of testicular torsion. The English literature since 1978 was also reviewed to illustrate the clinical characteristics and current treatments.

1. Introduction

Testicular torsion is a urologic emergency that is more common in neonates and postpubertal boys, although it can occur at any age. In the undescended testis, torsion typically occurs in the perinatal period and is considered unlikely after the first year of life. There are only a few reports of torsion of the undescended testis in normal adults in the English literature. In this article, we present a case of undescended testis torsion in a 44-year-old man and summarize the related literature to draw additional attention to this urologic emergency.

2. Case report

A 44-year-old man had a history of left undescended testis. He complained of left inguinal pain for 2 days. He denied fever, voiding pain, and changes in bowel habits. He came to our emergency department for help, and physical examination showed left inguinal area tenderness, with an absence of local heat and inguinal mass. The right testis was palpable, and the left testis was non-palpable. The serum white blood cell count was 11,900/uL (normal range: 4000–11,000/uL), neutrophils 74%, and C-reactive protein 8.27 mg/L (normal range: <5 mg/L). The general surgeon was consulted for suspecting incarcerated herniation; however, no evidence of a herniated mass was noted. Doppler ultrasonography and computed tomography (CT) revealed a mass approximately 4.35 cm in diameter in the left inguinal canal and no flow in the center of the mass with a rim of peripheral flow (Fig. 1). Technetium Tc-99m scrotal scintigraphy showed asymmetric mildly increased vascularity in the left inguinal area, with no evidence of torsion (Fig. 2A). Although the scrotal scintigraphy did not confirm the impression of torsion, progressive inguinal pain was still mentioned. Surgical exploration was performed and revealed torsion and gangrene in the left testicle within the inguinal canal (Fig. 2B). Orchiectomy was done and testicular parenchyma showed edematous, ischemic changes with a hemorrhage in pathology, which is consistent with a clinical picture of torsion. After surgery, the patient had an uneventful recovery.

3. Discussion

Cryptorchidism is a congenital disorder defined as a failure of the testicle(s) of a newborn to descend into the scrotum. For babies carried to term, the incidence of cryptorchidism is estimated to be 2.7–5.9% at birth, with 1.2–1.8% persistence by 1 year of age, and 10% are bilateral.[1] The most common location for an undescended testicle is just outside the external ring (suprascrotal), followed by the inguinal canal, and finally the abdomen. Complications of cryptorchidism include the development of germ cell tumors and infertility. Orchiopexy is ideally performed prior to the first year of age to prevent these issues.

Testicular torsion is a urologic emergency that, unfortunately, is misdiagnosed in adults in approximately 20% of cases.[2] Torsion of an undescended testis is uncommon and classically occurs during the perinatal period and is considered unlikely after the first year of life. Diagnosis is more difficult because it can mimic several entities,

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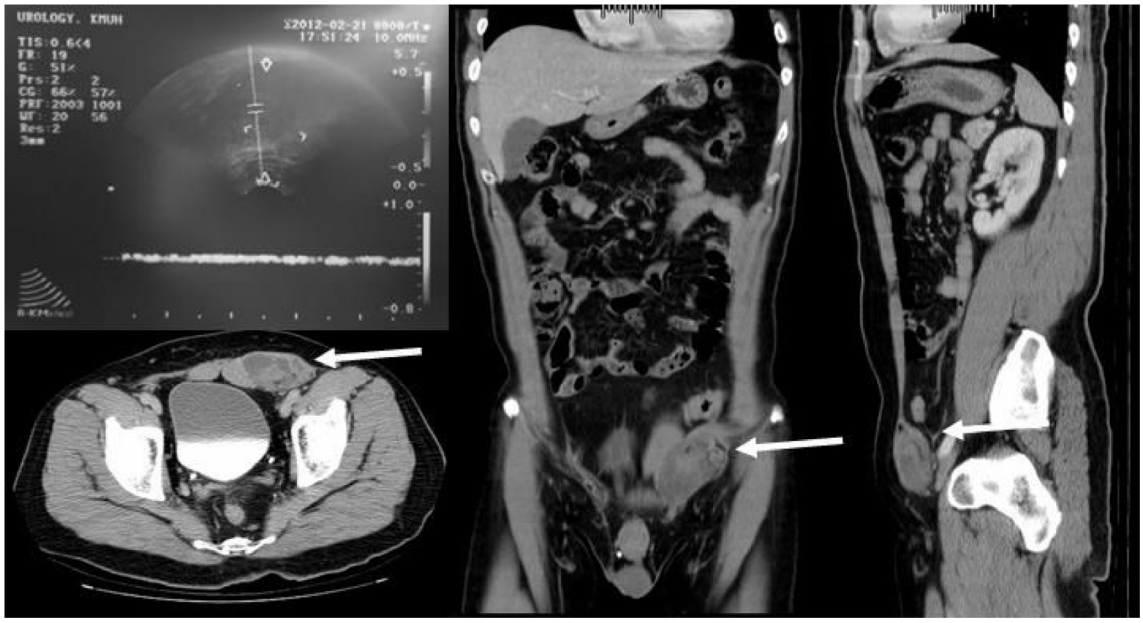

Fig. 1. Doppler ultrasonography reveals a mass approximately 4.35 cm in diameter in the left inguinal canal and no flow in the center of the mass with a rim of peripheral flow. Computed tomography reveals a left cryptorchidism with hemorrhage and infarction, and findings are consistent with a torsion of undescended testis, with suspected superimposed inflammatory process or malignant change.

such as acute abdomen, incarcerated inguinal hernia, and inguinal lymphadenitis.[3,4] The incidence and relative risk of torsion in an undescended testicle is still unknown.[5]

The mechanism of testicular torsion in the cryptorchidism is still unclear. Two theories have been proposed. The first theory is that abnormal contractions or spasms of the cremasteric muscles cause spermatic cord torsion. This theory could be supported by a 53.8% incidence of cryptorchidism noted in patients with cerebral palsy, and some reports refer to torsion of cryptorchid testis in patients with spastic neuromuscular disease.[6,7] The second theory is that the size of the undescended testis is associated with the risk of testicular torsion. It is explained by some reports indicating that torsion of an undescended testis often occurs in association with the development of a testicular tumor, presumably caused by increased weight and distortion of the normal dimensions of the organ.[8,9]

The clinical symptoms of undescended testis torsion include nonspecific abdominal pain, poor oral intake, vomiting, and restlessness. Physical examination findings include inguinal swelling and erythema with a firm, tender mass in the inguinal region and an empty ipsilateral hemiscrotum. Imaging studies such as Doppler ultrasonography, CT, and technetium Tc-99m scrotal scintigraphy can offer more detail. On Doppler ultrasonography, the testis with torsion showed no vascular flow within the undescended testis with surrounding hyperemia. CT showed a well-circumscribed, isodense or heterodense mass and had proper fine anatomic

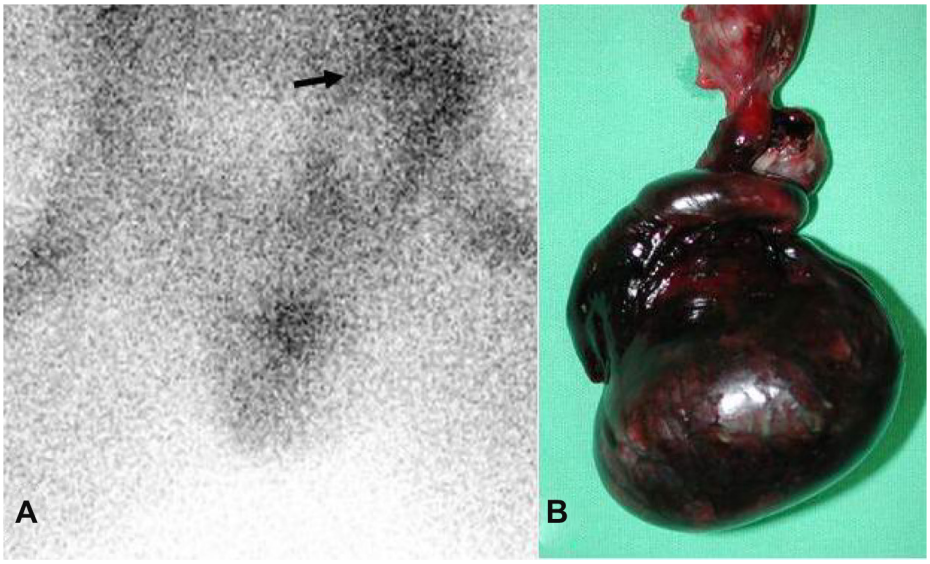

Fig. 2. (A) Technetium Tc-99m scrotal scintigraphy shows asymmetric mildly increased vascularity in the left inguinal portion, with no evidence of torsion. It was not compatible with our clinical judgment. (B) Surgical exploration was performed and perioperative findings revealed a gangrenous, torsional left testicle within the inguinal canal.