

## Torsion of Undescended Testis Mimicking Acute Appendicitis: Case Report

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DOI: [10.36347/sjmcr.2023.v11i10.040](https://doi.org/10.36347/sjmcr.2023.v11i10.040)

| Received: 13.09.2023 | Accepted: 17.10.2023 | Published: 27.10.2023

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### Abstract

### Case Report

Cryptorchidism or undescended testis (UDT) is one of the most common urological disorders in boys. UDT is usually linked to an increased risk of infertility and testicular malignancy, but also to a higher and significant risk of torsion. Yet, torsion of UDT represents an unusual mode of revelation of cryptorchidism, especially in adults. Symptoms mainly include acute abdominal pain, simulating an acute appendicitis when the right testicle is affected. This uncommon clinical presentation may be responsible for delayed diagnosis and management. Thus, genital examination is important to be performed by physician in the emergency room when a male patient presents acute abdominal pain. When the torsion of an UDT is clinically suspected, no medical imaging should delay surgical exploration. Any delay in the management may affect salvage of the gland and lead to orchiectomy. In this case report, we are reporting the case of a young male who was seen in the emergency room for acute abdominal pain mimicking an acute appendicitis. Physical examination and radiological investigation confirmed the diagnosis of torsion of a right UDT.

**Keywords:** Testicular torsion, Undescended testis, Cryptorchidism, Orchiectomy, Doppler ultrasonography.

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## INTRODUCTION

Cryptorchidism or undescended testis (UDT) is one of the most common anomalies in pediatric age groups, it is reported in 3% to 5% of newborn males [1]. It is characterized by the absence of one or both testes in the scrotum, due to an anomaly of testis migration from the abdominal cavity to the scrotum through the inguinal canal. If left untreated, it may be responsible for infertility or even testicular malignancy [1, 2]. Undescended testis is more prone to torsion, this increased risk is evaluated at 10% [2, 3]. Clinical symptoms are mostly non-specific.

We are reporting the case of a 20-year-old male who was seen at the emergency department for acute pain of the right iliac fossa mimicking an acute appendicitis. Genital examination found an empty right hemiscrotum. Doppler ultrasonography revealed a cryptorchid right testicle with absent blood flow. A right orchiectomy was performed with contralateral orchiopexy. Through this case we will discuss diagnostic and therapeutic features of this uncommon condition.

## CASE PRESENTATION

A 20-year-old young adult, with a history of untreated right congenital cryptorchidism, was seen in the emergency department for acute pain in the right iliac fossa, radiating to the groin, accompanied by nausea without vomiting. No abdominal or scrotal trauma was reported.

On examination, the patient was afebrile with normal hemodynamic and respiratory parameters. Abdominal examination found a 5 cm visible and palpable bulge in the inguinal canal without inflammatory signs. No abdominal distension or rigidity were found. Genital examination found an empty right hemiscrotum, the left testis size and position were normal.

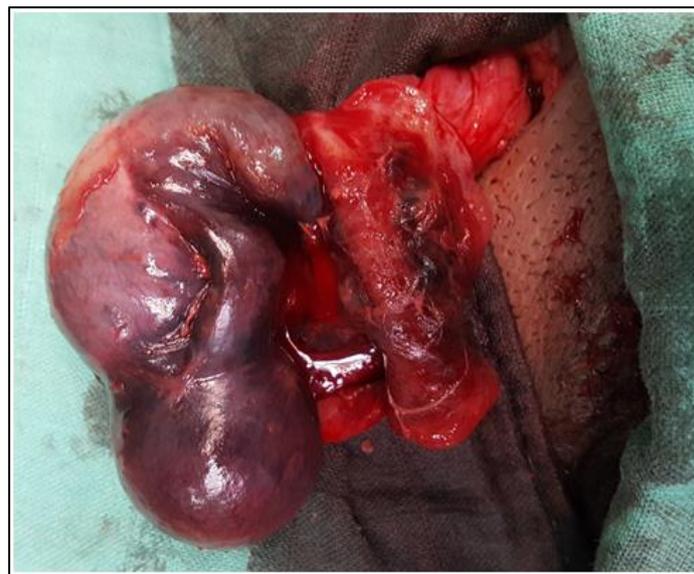
Ultrasonography showed a normal appendix, a hypertrophic testis within the right inguinal canal with heterogeneous parenchyma presenting several hypochoic areas. The blood flow was completely absent in Doppler ultrasonography.



**Figure 1: Image showing a twisted and congestive spermatic cord with a necrotic gland.**

Immediate ablation of the necrotic testis was indicated, the surgical exploration showed a twisted and congestive spermatic cord, with a necrotic gland (**Figure 1**).

After detorsion, there was no recovery of normal coloration despite rewarming of the gland and infiltration of vasodilators drugs such as diluted non adrenalized lidocaine 2% in the spermatic cord (**Figure 2**).



**Figure 2: Image showing lack of recovery of a normal vascularization of the testis.**

Orchiectomy was performed with contralateral orchidopexy. Pathology assessment did not find any malignant lesions in the operative specimens. Five-year follow-up was conducted and did not find any complications.

## DISCUSSION

UDT is a frequent condition, its incidence rates vary from 3 to 5% in term newborns and increase to 45% in premature male newborns [4]. It is linked to an increased risk of infertility and testicular malignancy.

Thereby, performing an orchidopexy helps in preventing these complications before the first year of life [5]. UDT is also associated with an increased risk of testicular torsion. In fact, the risk is 10 times more compared to the general population [5]. Despite its frequency, most medical publications are represented by case reports.

Another form of cryptorchidism, known as secondary or acquired, has been reported. It occurs in adults and is due to the migration of the testis from the scrotum to the inguinal canal, its pathogenesis is still

poorly understood [2], several theories have tried to explain the mechanisms by which torsion occurs in UDTs, however, these mechanisms remain poorly understood [6]. There is a frequent association between UDT torsion and testicular tumors which ranges from 2.5% to 18% [2, 3], this association can be explained by the increase in the weight and volume of the testicle [5]. In our case, no particular risk factor was noted and the clinical examination of the testicle did not find any suspicious lump.

Symptoms can be very variable and sometimes misleading. Nausea, vomiting or even fever may be present. The diagnosis should be considered in any patient with an empty scrotum or hemiscrotum who presents with acute abdominal pain, a suspected strangulated inguinal hernia, or inguinal lymphadenitis [3- 5]. Physical examination should include genital examination. It may find an empty scrotum or hemiscrotum and a palpable inguinal mass that is usually painful.

Doppler ultrasonography remains the method of choice in this condition. Its use is widely recommended to help diagnose UDT, but many false negative results have been reported. It has a sensitivity of 87.9% and a specificity of 93.3%, but this rate is lower in case of UDT [7]. It shows an enlarged testicle with no vascularization [2]. It may be normal if performed early or after spontaneous resolution of an intermittent torsion [5]. Ultrasound can also rule out other differential diagnosis such as a strangulated hernia, acute appendicitis, or an associated testicular tumor [5]. In our case, doppler ultrasound confirmed the diagnosis and eliminated the presence of a testicular tumor.

Other imaging techniques such as the tomography (CT), and technetium Tc-99m scrotal scintigraphy and diffusion-weighted MRI, have no place when dealing with such an emergent condition, but can be used when the torsion is weakly suspected [5]. Anyway, if there is a strong clinical suspicion of torsion, surgical exploration is required regardless the imaging results, and it should be performed within the first six hours [3].

Testicle function recovery is directly linked to an early treatment. The rate of preservation and successful orchiopexy into the scrotum of UDT ranges from 20% to 92% [8]. Data obtained from literature reviews concerning functional recovery of an UDT torsion are very weak, with a variable rate ranging from 10% to 37% depending mainly on the diagnosis delay [5].

Regardless of the location of the testicle, urgent surgical exploration is always required. If the torsion is confirmed through exploration, the attitude will depend on the viability of the testis. If it is necrotic, an orchiectomy is then performed. If it is viable after

detorsion, the spermatic cord will be dissected in order to provide enough length so the testis can be descended into the scrotum and a tension-free orchidopexy could then be performed to prevent further testicular torsion. This procedure can be performed immediately or be delayed since, to date, there are no objective criteria to confirm testicular viability [9]. Prophylactic contralateral orchidopexy is recommended by many authors, but the timing of this procedure is variable [2-10]. In our patient, testicular necrosis was mainly due to the delay in consultation and, consequently, in treatment.

The importance of this case report is to recall this rare entity in order to help healthcare professionals recognize this uncommon condition that should be sought, through an abdominal and genital examination, when a male patient presents with acute abdominal pain. The existence of an empty hemiscrotum (ipsilateral to the pain site) with or without a palpable bulge in the inguinal region suggests torsion of an UDT.

Early diagnosis and treatment remain the only prognostic factor for functional testicle recovery after surgical detorsion. Surgical exploration is always indicated if there is a clinical suspicion of testicular torsion, regardless of its location.

## CONCLUSION

Torsion of UDT is a rare but not exceptional condition, its diagnosis is mostly delayed because of its atypical clinical presentation. Early diagnosis is the key to testicle function recovery as it leads to prompt surgical treatment. Prevention can be ensured by UDT screening at birth and its treatment at a young age. Early diagnosis and prompt surgical treatment is the key.

**ABBREVIATION:** UDT = Cryptorchidism or undescended testis

## DECLARATION

- *Ethics Approval and Consent to Participate:* Not applicable.
- *Consent for Publication:* The patient gave his informed and written consent for the publication of this work.
- *Competing Interests:* The authors declare that they have no conflicts of interest in connection with this article.
- *Funding:* No funding.
- *Authors' Contributions:* All authors read and approved the final manuscript.
- *Acknowledgements:* Not applicable.

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