



Testicular torsion in unilateral undescended testis: A case report and literature review

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ABSTRACT

Early diagnosis of undescended testis (UDT) in patients under 2 years old plays a vital role in therapy success. However, in developing countries, UDT is often diagnosed in over 2 years. This case report described unilateral UDT in a patient aged 19 years accompanied by testicular torsion, which was found intraoperatively and not vital. Thus, the operator decided to do an orchiectomy. The operation was successful, and the patient was discharged the day after the surgery.

1. Introduction

Undescended testis (UDT) is defined as one or both testicles absent in scrotal sac due to the disruption of fetal testicle descending process from the abdominal cavity to the scrotal sac.¹ Numerous, possibly interconnected etiologies have been reported, such as genetic, hormonal, anatomical or environmental factors, may contribute to the development of UDT.² Early diagnosis of UDT yields favorable in fertility-related outcomes with concurrent risk reduction of germ cell tumors.¹ In Indonesia, 35.9% cases of UDT were diagnosed after 2 years of age.³ Greater delays are correlated with greater risks of testicular torsion. Reports of undiagnosed UDT presenting with testicular torsion remained scarce.^{2,4} We report a case of delayed diagnosis of UDT presenting with testicular torsion.

2. Case presentation

A 19-year-old male presented to the hospital with a lump and persistent pain in the right groin for 6 days prior. The patient did not feel any lumps previously. On physical examination, a mass was identified in the right groin, pain on palpation, and the right scrotal sac was empty (Fig. 1). Laboratory examination results were as follows: hemoglobin

15.8 g/dl, hematocrit 44.2%, leukocytes 7050/μl, platelets 280,000/μl, SGOT 156U/L, SGPT 150 U/L, urea 20.2 mg/dl, and creatinine 1.07mg/dl.

An ultrasonography scan of the right inguinal region demonstrated a hypochoic mass with testicular-like texture with inhomogeneous parenchyma, measuring 3.18 × 1.55 cm. On color doppler examination, there was no visible vascular flow inside. The right testicle was not visualized inside the scrotum. The left testicle was located inside the scrotal sac with a normal size, homogenous parenchymal texture, and visible vascular flow. Based on these findings, the patient was diagnosed with right UDT and suspected testicular torsion; therefore, the operator decided to do an immediate exploration of the testicle. The family was informed of the possibility of intraoperative orchiectomy.

The patient was given a 1-g prophylactic dose of antibiotic before surgery. An incision was made over the right inguinal canal (Fig. 2). Intraoperative findings showed that the right testicle was enlarged approximately twice the normal size, appeared blackish and was twisted 180° clockwise (Fig. 3). The testicle was considered nonvital; thus, a right orchiectomy was decided to be performed. The operation lasted about 30 minutes. The patient was fully conscious after the surgery and was discharged the day after.

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Fig. 1. Mass on the right inguinal was identified, scrotal sac was empty.

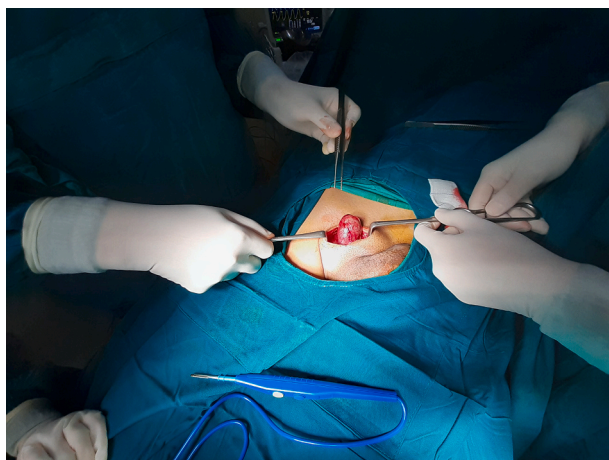


Fig. 2. Testicular exploration was performed, an incision was made over the right inguinal canal.

3. Discussion

Undescended testes (UDT) may occur unilaterally or bilaterally. A study conducted at one regional hospital reported that unilateral UDT is more common, with an incidence rate of 42.3%.³ Genetic disorder often causes UDT. Therefore, screening for UDT can be carried out since birth. Early treatment and diagnosis of UDT (<2 years) were associated with favorable outcomes.¹ Studies have shown that UDT is associated with an

increased risk of testicular torsion; the risk is higher in UDT with delayed diagnosis.²

Testicular torsion is an emergency with peak incidence at the age of 12–16 years. The incidence of testicular torsion before 25 years of age is 2.9 per 100,000 male population. Severe pain on genital or scrotal region without prior history of trauma or physical activity was the most frequently reported symptoms associated with testicular torsion. An enlarged, hardened, and high-riding testis with negative cremaster reflex were the cardinal signs found on physical examination.⁵

Testicular torsion in UDT may mimic an inguinal abscess. Therefore, an ultrasonic color Doppler is needed as a supporting examination to confirm the diagnosis. Color Doppler ultrasound is the standard examination for diagnosing testicular torsion. This examination should reveal a “whirlpool sign” (a spiral-like pattern of the spermatic cord in the external inguinal ring or the scrotal sac) and reduced or diminished Doppler color waves compared to the other testicle. In this case, the color Doppler examination had not found vascular flow on the right testicle; the finding was indicative of testicular torsion. Prompt and proper management may be sufficient to maintain testicular tissue vitality.^{2,3,5}

Testicular torsion in UDT is often diagnosed late due to non-specific complaints such as swelling in the groin, nausea, vomiting, and abdominal pain. In this case, the patient first came because he complained of a lump in the groin area, which appeared 6 days prior, followed by pain that had been experienced for 6 days. The diagnosis was made based on physical examination, Doppler ultrasound, and intra-operative findings. The recommended treatment option for both testicular torsion and UDT at puberty or postpuberty is a surgical procedure. In cases of UDT with a suspected testicular torsion, exploration via inguinal incision is recommended. Studies have shown that orchiopexy has a better prognosis when compared to orchidectomy for incomplete testicular torsion. Kargl et al. noted that one out of three cases of UDT treated with exploration-detorsion had experienced testicular ischemia.⁵ In this case, delayed presentation had resulted in late management of the testicular torsion in UDT. Orchidectomy was performed due to nonvital testicle on the affected side.

4. Conclusion

In most UDT cases with testicular torsion, the testes will have an impaired function due to atrophy or hypertrophy that occurred. However, an early and accurate diagnosis can reduce the risk of testicular ischemia in UDT.

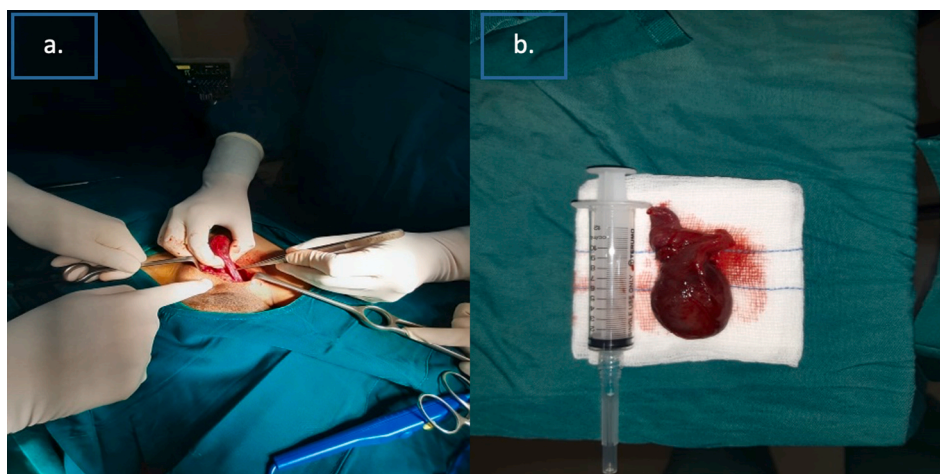


Fig. 3. (a) Orchidectomy procedure (b) nonvital testicle.

References

1. Braga LH, Lorenzo AJ. Cryptorchidism: a practical review for all community healthcare providers. *Canadian Urological Association journal = Journal de l'Association des urologues du Canada*. 2017;11(1-2Suppl1):S26–S32.
2. Suryansyah A. Karakteristik UDT (Undescended Testis) di RSAB Harapan Kita tahun 2009. *Sari Pediatri*. 2011;13(1):1–4.
3. Abacı A, Çatlı G, Anık A, Böber E. Epidemiology, classification and management of undescended testes: does medication have value in its treatment? *Journal of clinical research in pediatric endocrinology*. 2013;5(2):65–72.
4. Lee SM, Huh J-S, Baek M, et al. A nationwide epidemiological study of testicular torsion in Korea. *J Kor Med Sci*. 2014;29(12):1684–1687.
5. Kargı S, Haid B. Torsion of an undescended testis — a surgical pediatric emergency. *J Pediatr Surg*. 2020;55(4):660–664.