

Case study

Beware the empty sac. Case of cryptorchid testicular torsion in the inguinal canal

Abstract

Undescended testis is a common urogenital disorder whereas testicular torsion is a well-recognized urological emergency. However, torsion of an undescended testis remains a rare clinical entity which poses a diagnostic dilemma.

We present a case of torsion of a right undescended testis located in the inguinal canal in an otherwise healthy 13-year-old boy who presented with a painful mass in the right inguinal region. He underwent pre-operative imaging study and subsequently surgical exploration which revealed a twisted gangrenous undescended right testis which required an orchidectomy.

Due to the rarity of the condition, we discuss the diagnostic challenges present which can potentially delay the diagnosis and ultimately reduce the testes salvation rate.

Keywords : Undescended testis, torsion, emergency, orchidectomy

Introduction

Undescended testis (UDT) is known to be the most common urogenital disorder diagnosed at birth. Its' prevalence increases in prematurity. The management of UDT is well documented and guidelines exists as per the American Urological Association and European Association of Urology. Current recommendation is for surgical exploration and orchidopexy to be performed beginning from 6 months of age to 12 – 18 months¹. However, this condition could persist into adulthood especially in developing countries owing to the condition alluding diagnosis in childhood². Long term complication of this condition is also well reported in literature, which are reduced fertility and possibility of malignant change in the undescended testis². However more acute complication such as torsion in the undescended testis is still a rare entity, posing diagnostic and subsequently management challenges, resulting in delayed diagnosis and unviable testis at exploration. We report a case of a torsion of an undescended testis in the inguinal canal in a 13-year-old boy in Hospital Sultan Ismail, Johor Bahru Malaysia.

Case summary

Patient is a healthy 13-year-old boy, presented to our hospital with an enlarging painful swelling over his right groin for past three days. His symptoms were associated with lower abdominal discomfort and nausea. Upon further detailed history, it was found that patient had a right undescended testis since birth however no surgical consult was made throughout childhood. Clinical examination revealed a tender firm mass over the right mid-inguinal region measuring 4x3cm with slight erythema over the overlying skin. His right scrotum was empty and under-developed. Left testis was palpable. Secondary sexual characteristics was also seen.

Ultrasound Doppler study revealed a small testis to be in the right inguinal canal with no color doppler detected and congested cord structures. The left testis was in the scrotal sac with normal architecture and color flow. We came to a diagnosis of possible torsion of right undescended testis and scheduled him for an urgent inguinal exploration. Parents were informed on the possible risk of orchidectomy as well.

Right inguinal exploration was made which revealed a gangrenous right testis. Its cord was heavily congested and appeared dusky, twisted towards the midline a total of 5 times (1800 degrees). There was no associated hernia. Complete detorsion of the cord was done and warm pack was applied to the cord and testis for 5 minutes after which cord appeared pink however the testis was still clinically unviable. Hence, decision made for right orchidectomy and orchidopexy on the contralateral side. Patient made full recovery and was discharged home the next day.



Figure 1. Empty scrotal sac on the right. Vague tender mass on the right inguinal region

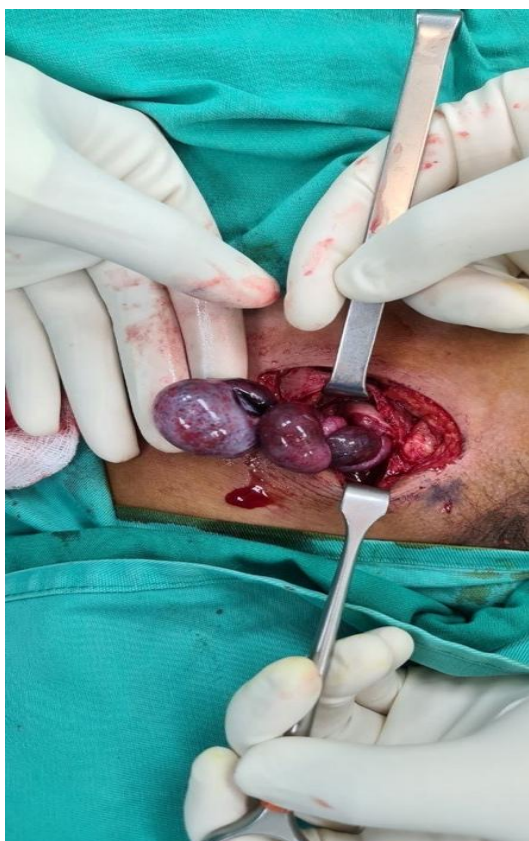


Figure 2. Upon entering inguinal canal, gangrenous right testis, twisted and congested cord



Figure 3. After detorsion of the cord done, right testes non-viable hence done right orchidectomy

Discussion

UDT is common in full term male babies about 2-8% and can increase to about 65% in premature male infants¹. Early treatment is advocated within 18 months of age for a better outcome¹. Despite this, its diagnosis could still be missed especially in developing countries thus condition may persist into adulthood². The possible complications of UDT are well documented in available literature and testicular torsion is one of it. Studies have shown that UDT is associated with an increased risk of testicular torsion and the risk is higher with delayed diagnosis³.

Testicular torsion is a surgical emergency and its incidence peaks about 12-16 years of age which corresponds to our patients age group³. Torsion of UDT remains a rare clinical entity thus poses difficulty for the treating physician³. The problem is further compounded by atypical presentation and misdiagnosis. The lack of awareness for this condition amongst patients, parents and medical practitioners may further contribute to late presentation to hospital and poor salvage rate^{4,5}. As in the case discussed above, patient presented after 3 days of pain, which is far from golden time of 12 hours which translates to a poorer outcome.

The reason behind the torsion of UDT has been thought to be because of the cremasteric muscle spasms that causes the spermatic cord torsion⁶. Another theory proposed is that the torsion of the UDT happens when there is an association with testicular tumor given the enlarged size of the testis⁶.

Torsion of UDT can often mimic certain diagnosis like strangulated inguinal hernia, inguinal abscess, lymphadenitis and even epididymitis. In rarer cases of torsion of testis within the abdominal cavity, patients may even present with signs of an acute abdomen^{4,5}. These differentials act as red herrings to the true underlying pathology. Therefore, a good history and physical examination will raise the suspicion of this diagnosis.

Treating physicians who encounter male patients with suggestive symptoms and a concurrent empty scrotal sac should be highly suspicious of this condition as it is a surgical emergency. An ultrasound color Doppler should be done to further strengthen the diagnosis of torsion and ruled out the other possible causes as well. In our patient, the right UDT was in the inguinal canal with no color Doppler seen which complement the clinical diagnosis of torsion and also possibility of a non-viable testis.

Based on the literatures, salvation rate for torsion of a descended testis is about 56 to 90% and these numbers drop significantly with UDT to 10%⁷. This is mainly due to the delay in surgical treatment. Ischemic damage to the testis sets in after 4 hours and gangrenous testis is associated with more than 360-degree torsion or 24 hours delayed presentation⁷. This was clearly illustrated in our patient. Surgical treatment is still inguinal exploration and either orchidectomy or orchidopexy depending on the testis viability. In addition, the prophylactic contralateral testis fixation is recommended by majority of the studies⁴.

Conclusion

Torsion of an undescended testis remains a rare entity however clinicians should have high level of suspicion as these patients require urgent surgical intervention. Delay in diagnosis can potentially lead to low testis salvation rate.

References

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