CASE REPORT

TORSION OF TESTIS – REPORT OF TWO CASES WITH A BRIEF REVIEW OF LITERATURE.

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Abstract

The torsion of testis is an acute vascular event, one of the emergency presentations seen in young adolescent males. The spermatic cord becomes twisted and rotated on its axis and results in gangrene of testis due to vascular ischemia. There may be chances of loss of normal spermatogenetic function if there is any delay in the management of testicular torsion.

We had 2 cases of torsion testis with classical signs and symptoms with acute pain over the scrotum, elevated testis & swelling on affected side. Emergency ultrasound and Doppler were done and reported as torsion testis with ischemia. The cases were managed with orchiectomy since the patients reported to us late. Patients were comfortable in post-operative period and discharged.

In conclusion, testicular torsion should be considered in undescended testis. The emergency Ultrasound and Doppler investigations have to be done in all cases of acute scrotum who have acute pain over scrotum.

Key words: Testis, Torsion, Doppler, Orchiectomy, Orchidopexy.

Introduction

Though it is common in adolescence, torsion of the testicle is not unusual as a cause of acute scrotum in the elderly population[1]. A 65-year-old Malay gentleman with a background history of Parkinson's disease once had presented with torsion of testis in one hospital in Malaysia[2]. The acute scrotal diseases are medical emergency which involves the scrotum and/or the intra-scrotal contents and later require proper medical or surgical management[3]. Cases of Torsion testis may present as an acute onset of severe and unbearable scrotal pain. If there is any delay in diagnosis of testicular torsion, patient may land with gangrene of testis which requires orchiectomy. Sometimes it may lead to medico legal issues which would focus about delayed management. The main differential diagnosis is usually epididymo-orchitis which requires only conservative (medical) line of management. The vascular and inflammatory causes are important for the cases of acute scrotum and the importance of a differential diagnosis between them[4].The testicular torsion in the intravaginal form ("bell clapper deformity"[4]) is a condition that characterizes itself for the free rotation of the testicle due to the anomaly of testicular fixation.

Case No. 1

A 23-year-old young man presented to the accident and emergency unit of SIBI Hospital, India with complaints of pain in the right side of the scrotum for 20 minutes duration. Pain was severely aching in nature without radiation. There was no history of trauma over the scrotum and lower abdomen. There was no history of urinary symptoms and fever. No history of previous episode of similar presentation and urinary tract infection were noted. There was no past history of surgery. He is not a known case of diabetes and hypertension. On examination, he was in painful distress and afebrile. His left side of the scrotum was normal with findings of absence of swelling and normal skin with normal rugae. The right side scrotal examination revealed elevated right testis, swelling (Fig-1) and tenderness with loss of rugae. Prehn's sign was negative.

Figure 1. Right sided scrotal swelling and elevated right testis.

Positive Prehn's sign indicates the relief of pain on lifting the affected testicle and points towards epididymitis. Cremasteric reflex was absent. Examination of penis revealed no abnormal discharges through urethra. Pulse Rate was 76 beats per minute, regular, with normal volume; blood pressure was 114/76 mmHg. Respiratory, abdominal and cardiac examinations were normal. Diagnosis of torsion testis-right sided was made. The patient's condition did not support in favour of right epididymo-orchitis as the testis was not warm and Prehn's sign was negative.

Doppler ultrasound (Fig-2) showed decreased blood flow to right testis and minimal fluid collection in tunica vaginalis suggestive of right testicular torsion.

Patient was explained about his condition and informed consent was obtained for removal of right testis. An explorative surgery was performed under general anaesthesia and left orchidopexy was done. Then right side of scrotal

skin was explored and gangrene of the right testis was noted (Fig-3). Right orchiectomy was performed. Post-operative period was uneventful. Patient is still under our follow up.

Figure 2. Doppler ultrasound test showing no demonstrable vascularity in the right testis.

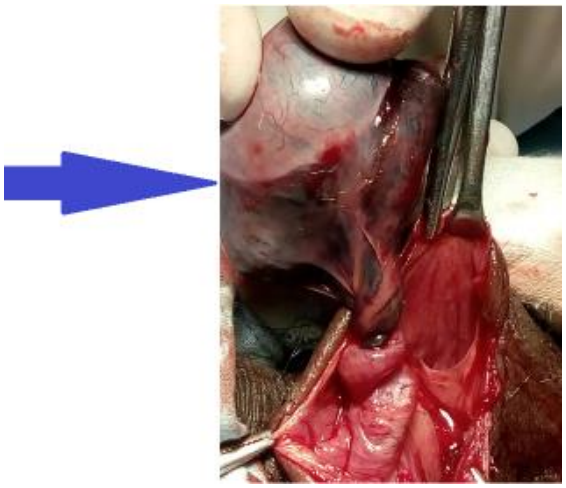

Figure 3. showing the torsion and gangrene of right testis (arrow mark) during scrotal explorative surgery.

Case No. 2

A 15 year- old boy, presented to the accident and emergency unit of SIBI Hospital, India with complaints of pain of thirty minutes duration over left inguinal region with radiation to left loin. Absence of left side testis was noted and history revealed that it was absent since birth. He noticed small swelling in his left inguinal region when he was 11 years old. There were no issues over left inguinal region till he came to hospital for this episode. There was no history of trauma over the scrotum and inguinal region. There was no history of urinary tract infection. He had not undergone surgery for left inguinal region swelling. He did not have any co-morbidity like diabetes or hypertension. On examination, he was afebrile and was in distress of pain. His right side scrotum was normal with normal testis. There was absence of scrotal pouch on his left side. Swelling was noted over left inguinal region (Fig-4). The size of the swelling was 2 x 1.5 inches and it was tender but not warm. Examination revealed normal penis and no abnormal urethral discharge was noted. Pulse Rate was 80 beats per minute, regular, with normal volume, blood pressure was 120/74 mm of Hg. The examination of respiratory, abdomen and cardiovascular systems were found to be normal. Diagnosis of torsion of left undescended testis was made and other possible causes were ruled out. There were no points to support left epididymo-orchitis. The ultrasound and Doppler study showed no demonstrable blood flow to the undescended left testis suggesting left undescended testis with testicular torsion (Fig-5).

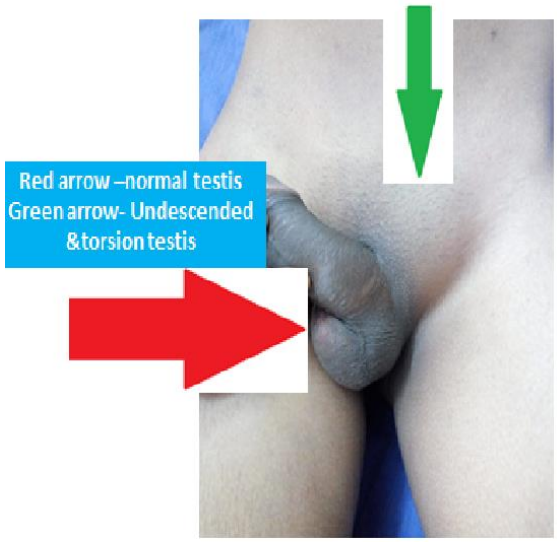

Fig -4 showing absence of left scrotal pouch and left inguinal swelling suggesting left undescended testis.

Figure 5. Doppler ultrasound test–showing no demonstrable vascularity left testis.

Father of the patient was explained about the condition and informed consent was obtained for removal of left testis. An explorative surgery was performed under general anaesthesia and gangrene of the left undescended testis was noted (Fig-6). Right orchidopexy and left orchiectomy were performed. Patient was well during his post-operative period and was discharged on time without any further complications. He is still under our follow up.

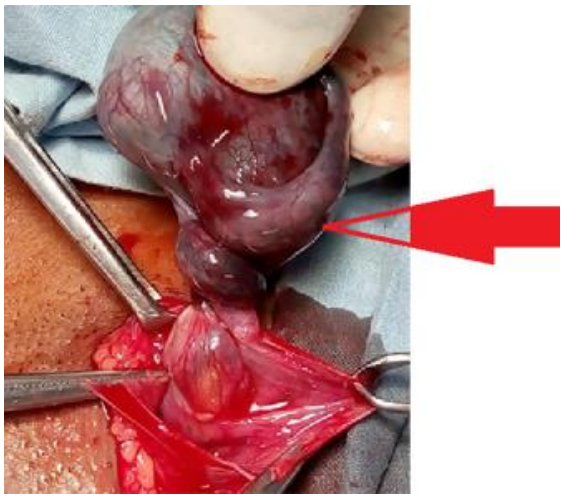

Figure 6. showing torsion and gangrene (Red arrow) of undescended left testis during the surgery

Discussion

Torsion of the testis is more common in adolescent period. Acute and sudden pain over any one side of scrotum is mostly due to torsion testis. It is explained that there is twisting of the spermatic cord resulting in acute pain over one side of scrotum due to ischemia of testis[5]. Testicular torsion is more common because of anatomic anomalies of tunica vaginalis and epididymis which would allow excessive testicular mobility inside the scrotal pouch. The intravaginal torsion (bell clapper deformity) is the most frequently occurring type[6, 7] Testicular torsion can manifest at any age and incidences are more common compared to testicular tumours. The increasing age is the sole identifiable risk factor for orchiectomy[6, 8]. Rotation and torsion of testis mostly medial rotation ranging from 360° to 720° in its own axis can cause interruption of the testicular blood supply. There is one type (Type1) where the head and tail of epididymis are attached to the testes[9]. The common signs and symptoms of torsion testis are redness, swollen oedematous scrotum and acutely tender testicle, though there is no history of trauma and the testis may lie

horizontally and inflammatory signs may or may not be present[10,11]

Children are usually brought to the emergency department with pain and acute swelling in scrotum and there are diverse pathologies that present themselves as acute scrotum on emergency. The pathology of these conditions are usually inflammatory and vascular causes. The probable causes of pain and acute scrotal oedema are testicular torsion, appendices testis torsion, epididymitis and orchitis[12]. Differentiating them is difficult, because there is no trust worthy clinical sign which can be considered as pathognomonic to these conditions[13]. There is no standard and classical clinical presentation for testicular torsion and it can present similar to epididymitis[14]. A significant number of proven testicular torsion cases present with gradual onset discomfort, whereas alternative causes of scrotal pain, such as epididymitis, can present with sudden discomfort in up to 51% of cases[15]. Finally, circumstances surrounding the presentation may not reveal the ultimate diagnosis. Testicular torsion is attributed to direct trauma in 4–8% of reported cases, and more frequently occurs during sleep, as a result of spontaneous cremasteric contractions[16]. Since there is a wide variety and overlap of symptoms and circumstances surrounding testicular torsion, it is imperative to not rely on historical features alone to guide further evaluation. Presence or absence of cremasteric reflexes, scrotal oedema/erythema, pain along the upper pole of the testicle or epididymis, enlarged epididymis, transverse lie, Prehn's sign (relief of pain when the examiner is lifting testicle), and retraction of testicle all fail to give a definitive answer. Even when experienced urologists combine all these exam findings, their initial impressions are frequently erroneous[15].

When surgery is performed early within the first 6 hours from the appearance of signs and symptoms, there would be 90% chance of recovery. This would go down to 50% after 12 hours and to 10% after 24 hours lapse before surgical treatment[17]. Clinical examination has an important role to diagnose the testicular torsion[18]. A study involving 245 boys with acute scrotum, observed a 100% correlation between the presence of the cremasteric reflex and the absence of testicular torsion. It confirmed that the presence of the cremasteric reflex is very important clinical finding to rule out testicular torsion and the absence increases suspected diagnosis[19]. The radiological study used in the hospital for confirming the diagnosis is the Doppler ultra sound, which has a 96.8% sensitivity, a 97.8% specificity, a positive predictive value of 92.3% and a negative predictive value of 99.1%. They conclude that clinical assessment combined with Doppler ultrasound are most reliable confirmative procedures to arrive at proper diagnosis of the testicular torsion[20].

Nonsurgical management (Manual de-rotation) can be tried if there is no evidence for ischemia or gangrene of affected testis which would be assessed by clinical parameter and Doppler study. Manual de-rotation can be done when the surgery is not an immediate option[21]. It can also be tried during the preparations of surgery for the patient and it should not be supersede or delay surgical interventions[22, 23]. Manual de-torsion should not replace surgical intervention or exploration[24, 25]. The testes are typically de-torsed from the medial to lateral side, turning the physician's hands as if "opening a book"[26]. Usually general anaesthesia is not necessary to do this simple and short duration of re-torsion procedure. Intravenous analgesic drug administration or sedation are enough to tackle this procedure. Sometimes we can give spermatic cord block which would

support for de-torsion by relaxing cremasteric muscle fibres. The testicle is typically twisted more than 360 degrees, so more than one rotation may be required to completely de-torse the testicle[26]. Though we succeed by doing de-torsion to save the testis, we need to monitor the testis through clinical and Doppler study. Completion of the treatment would be attained by doing orchidopexy in both sides to prevent re-torsion. Sometime surgeon may not be able to take concrete decision for surgery. Delaying the time may worsen the patient's condition. It is safer to proceed surgical exploration of scrotum and decide accordingly on the table. From a surgeon's point of view, it is always safe to counsel the patient for potential need of orchiectomy and get the consent before surgery [25, 27,28,29,30.] Many studies said that patients with physical findings strongly suggestive of testicular torsion should be referred for surgical exploration regardless of ultrasound findings[25, 27,31,32,33].

Orchidopexy of other testis should also be done though surgery for affected side could be orchidectomy or orchidepexy[34]. The type of bell-clapper deformity increases testicular mobility so that the risk of torsion in both sides increases in 80% of patients[10]. It is assumed to be present contra laterally in all patients with testicular torsion[35, 28, 30]. There are rare incidences of recurrent torsion after many years in some patients those who had undergone orchidopexy. These patients and their parents have to be warned regarding the risk of recurrences and consequences and they have to be under follow-up.

Conclusion

The family physician and doctor in emergency department have to take more care whenever they get the patient with scrotal pain or lower abdominal pain. These patients need proper physical examination and have to be submitted for ultrasound/Doppler studies whenever there is any doubt regarding torsion testis or epididymo-orchitis. Rarely Doppler study of epididymo-orchitis may show reduced blood to testis. The compartment syndrome is the cause for ischemia to testis and the early incision over tunica albuginea (capsulotomy) would save the testis before it goes for irreversible necrosis. There is nothing wrong to refer these patients to a specialist –urologist to get opinion to avoid medico legal issues. Surgeon can go for early exploration of scrotum whenever the Doppler report is inconclusive. Patient and the parents have to be counselled well regarding possible orchiectomy before scrotal exploration.

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