

Testicular Torsion: An Analysis Of Sixteen Consecutive Cases And A Review Of The Literature

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ABSTRACT

Aim: Acute testicular torsion may lead to testicular gangrene. We aimed to study the circumstances that may have predisposed to this in a semi urban area in the Edo State of Nigeria.

Material And Method: The records of all the patients who were examined in the A/E, the operation theatre and the clinics for testicular torsion were obtained and analyzed for the biodata, the time of presentation, the investigations, the treatment and the outcome.

Results: A total of 16 patients were examined within the period. Their mean age was 22.3 years, while the response time to the scrotal pain was 23.1 days. The commonest anatomical deformity was horizontal lie. The orchidectomy rate was 37.25 percent.

Conclusion: A long response time to the scrotal pain and a high orchidectomy rate were exposed by this study. This was thought to be due to ignorance, which could be eliminated through public enlightenment.

Key Words: Testicular torsion, Response time, Orchidectomy rate, Ignorance

INTRODUCTION

Testicular torsion is described as the twisting of the spermatic cord, resulting in acute pain and ischaemia [1], particularly of the testis. The twisting of the spermatic cord results in a compromised blood flow to the testis, the extent of which depends on the degree of arterial compression [2] and the rotation of the testis. The cause of testicular torsion is unknown, but certain anatomical conditions such as clapper bell deformity, horizontal lie and maldescent of the testis are traditionally referred to as the risk factors.

According to Livne et al [3], the relative incidence of the testicular torsion, the torsion of testicular appendages and epididymochitis is variable and depends on the mode of diagnosis and the age of the patient. It can occur at any age, but the peak incidence is seen in the adolescent age group, when the testes rapidly increase in size due to a sudden surge in the testosterone levels. Acute spermatic cord torsion is a urologic emergency which requires an accurate diagnosis and a timely intervention, not because it threatens life, but in order to achieve a testicular salvage.

Testicular torsion, if untreated, leads to atrophy of the ipsilateral testis and suppression of the contralateral, with a variable effect on reproduction. Here lies the importance of the subject of testicular torsion and it is therefore an active area of malpractice litigation. Irrua specialist teaching hospital is located in the semi rural area of Nigeria and serves about four million people from the northern part of the Edo state and the neighboring states of Kogi, Delta and Ondo [4]. Here, we are reviewing our experience with testicular torsion in order to understand the response of the rural dwellers to acute scrotal pain.

Materials And Method: This was a retrospective study which spanned a five-year period from 2004 to 2009. The information was obtained from the theatre and the Accident and Emergency records of the hospital regarding the age, symptoms, time between the onset and presentation, investigations, operative findings and the surgical outcome of all the patients with testicular torsion.

The data which was so obtained was analyzed by using a simple statistical method as described by Kuzma in 1994.

Results: A total of sixteen (16) patients with testicular torsion were examined within the study period. They ranged in ages from twelve (12) to thirty-eight (38) years, with a mean age of 22.3 years. The duration of the symptoms before the presentation ranged from one (1) hour to six (6) months, with a mean of 23.1 days. All the patients presented with scrotal pain, swelling and tenderness. Prehn's test was not routinely used.

Six (37.25) patients underwent orchidectomy for gangrenous testes. They were all below 20 years of age. Orchidopexy was done for the contralateral side in all the patients. The documented anatomical abnormalities were horizontal lie in 3 patients (18.60%), clapper bell in 1 patient (0.08) and unrecorded abnormalities in 12 patients (81.32). The left testis was involved in 10(62.5%) patients.

DISCUSSION

Testicular torsion is mainly a disease of adolescents and young adults, but it can occur at any age including the antenatal period [1]. This was confirmed by this study, whose patients had a mean age of 23.3 years. The torsion usually occurs at puberty and an anatomic defect [2] is usually present. The most common defect which was found in this study was horizontal lie, which in addition to the bell clapper deformity, was often responsible for the testicular torsion. However, in most of the patients in this study, an underlying deformity was not documented, either because they were absent, or because they were not searched for. This finding however confirms the assertion by Schmitz[5] that an anatomical deformity is found in less than 50% of the patients.

The total number of patients (16) in this study over a period of five years was low, considering the population which was sub-served by the centre. This was far lower than that of the study of Pepe et al [6] over a similar period of five years. Of their 155 patients with acute scrotum, the clinical features suggested torsion in 40

patients, while colour Doppler sonography suggested torsion in 42 patients. This disparity in the patient volume can be explained in one of the following ways. This centre is located in a rural setting with the attendant ignorance. Testicular torsion, being a self limiting process, is ignored once the pain starts subsiding. Subsequently, testicular atrophy, which is often unexplainable in feature when the patient presents with infertility, occurs. The author has seen patients with bilateral testicular atrophy with a previous history which was suggestive of testicular torsion. Secondly, Complimentary and Alternative Medicine (CAM) practitioners abound abundantly in this environment [7] and advertise their product and prowess copiously in the state media, often making them the first port of call by these patients. Since the pain of testicular torsion resolves after a while, they are considered to be cured, only to present later with testicular atrophy and sometimes infertility. The torsion-detorsion syndrome may present in the same manner if it is ignored. Finally, testicular torsion is sometimes misdiagnosed and treated as epididymorchitis [1] by the non urologists or general practitioners, as colour Doppler sonography is often unavailable or is not considered.

These circumstances also affect the patients' response time to the scrotal pain, which averages 23 hours in this study. The initial torsion and detorsion are ignored until a severe acute episode leads the patient to present to the hospital. Three of our patients had the torsion- detorsion syndrome. The long patient response time to the scrotal pain accounted for the high orchidectomy rate which was experienced in this study. Six (37.3) of the patients had ipsilateral orchidectomy and this was far higher than the 2.7% which was recorded by Tajchner et al [8] in their study. The above explanations may also account for this delay in presentation and the high orchidectomy rate.

The diagnosis of testicular torsion in the early age groups requires a high index of suspicion. In the study of Kaye et al [9] with sixteen neonatal torsions over a four year period, they concluded that complicated pregnancies and vaginal deliveries seemed to predispose the patients to testicular torsion, which were never salvageable and therefore did not warrant an emergency intervention. Livne et al [3] however summarized, that there was a controversy in the management of pre-natal testicular torsion, while post-natal torsion required urgent surgery.

Testicular torsion must be considered in any patient who complains of acute scrotal pain and swelling [10]. The symptoms include sudden scrotal pain and swelling, which are sometimes associated with nausea and vomiting [2]. A physical examination distinguishes it from, trauma, epididymorchitis, strangulated hernia, testicular tumour and testicular fracture. It usually reveals a swollen scrotum with remarkable tenderness. Maneuvers such as elevation of the scrotum are often helpful in distinguishing between testicular torsion and epididymorchitis [1]. A physical examination is however, often inconclusive, according to Workman et al [11].

There have been many discussions on the need for the radiological evaluation of the patients with testicular torsion. A testicular scan or Doppler ultrasonography may be helpful in this regards. In the words of Arce et al [12], "the finding of a rotated spermatic cord could be a highly reliable and a direct sign for the diagnosis of a testicular torsion. The examination of the spermatic cord should be added to the evaluation of the testis in patients with suspected testicular torsion, to enhance the sensitivity of the examination". In the study of Pepe et al [6], colour Doppler ultrasonography (CDS) was indispensable in the imaging of the patients with acute

scrotum and in consonance with the findings of Arce et al, he said that this method of evaluation was operator dependent and had to be supported by a case history and a physical examination.

Timing is essential in testicular torsion, in order to maximize the testicular salvage rate. According to Kalfa et al [13], strict conditions are required, including the time which is spent on high resolution ultrasonography, which should not be more than 30 minutes, a feat which he says, can only be achieved by a senior paediatric radiologist. The use of radionuclide scanning has been in place for long. However, radionuclide scintigraphy with ^{99m}Tc is helpful only when the disease has passed the acute phase (the first 12 hours) and when the vascular compromise has been prolonged, according to Lavallee et al [1]. These investigative modalities should never be a cause of delay in the surgical intervention in patients who are suspected to be having testicular torsion.

Acute torsion of the spermatic cord is a urologic emergency which requires prompt diagnosis and timely surgical exploration, in order to achieve testicular salvage. However, in order to buy time or in dire cases, manual reduction may be done, followed subsequently by scrotal exploration and bilateral orchidopexy as a semi-elective procedure [14]. Manual reduction should never be used as a sole method of treatment, as testicular torsion is notoriously recurrent. Pre-operative detorsion is the fastest way to relieve testicular ischaemia, but it is not a substitute for surgical exploration and bilateral orchidopexy is still necessary [15]. The time which is spent on detorsion, in our opinion, can be used for scrotal exploration, if the theatre is immediately available. The treatment of neonatal torsion requires a specific mention. Generally, the accepted practice is to do orchidectomy if the rotated testis is gangrenous and to then fix the contralateral one. Bilaterally, neonatal, testicular torsion is a rare tragic event and Zampieri et al concluded that it is only in patients with bilateral necrotic testes that bilateral orchidectomy is required. This was contrary to the findings of Callewaert et al [17], who opined that whenever possible, even the necrotic testes should not be removed during the surgery because of the possibility of retaining some endocrine function.

The timing of the surgical intervention in neonatal testicular torsion is currently controversial, varying from non-surgical management to immediate orchidectomy and contralateral orchidopexy. According to Diahangiran et al, [18] there seems to be no advantage to an early surgical intervention, as the need for orchidectomy is debatable, because the torsion only leads to ipsilateral testicular atrophy. For this reason, they opined that since bilateral asynchronous testicular torsion is rare, contralateral orchidopexy should be deferred until the risk of the anaesthesia and the surgery is lesser. Contrary to this, according to Roth et al, [19] bilateral torsion is now being reported with more frequency and in view of the inaccuracy of physical examination in assessing the contralateral testes, his team has adopted emergent surgical exploration as their approach.

CONCLUSION

Testicular torsion requires emergency urologic attention in order to optimize the testicular salvage rate. The ischaemia time of the testis is traditionally placed at 6 hrs after which the testis may undergo gangrene formation. Imaging or radionuclide scanning should not be a cause of delay, as ultrasonography can dangerously produce false negative results. Scrotal exploration should be undertaken in an environment where these imaging modalities are unavailable, even in the presence of very minimal suspicion of the testicular torsion, especially in circumstances where further delay may reduce

the chances of saving the testis. In bilateral testicular torsion, we agree that a testes sparing approach should be adopted with the hope of retaining some endocrine function.

There is a need for public enlightenment on the dangers which are associated with scrotal pain. The most appropriate target population for this, we think, is women who attend the antenatal clinics, who in turn can inform their male children. This topic may also be incorporated into the school health programs with respect to the age group which is the most vulnerable one. These programs have the potential for reducing the response time to the acute scrotal pain and by extension, to the testicular gangrene.

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