

## Testicular Torsion as seen in University of Maiduguri Teaching Hospital, North Eastern Nigeria.

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### ABSTRACT:

**Background:** Testicular torsion is one of the commonest urological emergencies affecting adolescents and young adults worldwide. Favourable outcome depends on severity and timely intervention. Delayed presentation, missed diagnoses and prolonged reaction time are associated with high testicular loss due to gangrene while the reverse is associated with high testicular salvage rate. **Materials and Methods:** We retrospectively reviewed all cases of testicular torsion in University of Maiduguri Teaching Hospital [UMTH] between January 2008 and December 2011. Information was obtained from clinical notes and laboratory investigations. **Results:** A total of 56 patients were studied. The age ranged from 11-35 years with a mean of  $23 \pm 17.5$  years. Majority (91%) of the patient were in their second and third decades. Most, 41 (73.21%) presented during the cold harmattan season (November to February). Only 11 (19.64%) presented within golden 4 hours from onset of symptoms, 30 (53.56%) between 4 to 24 hours while 15 (26.79%) presented beyond 24 hours. Twenty-two (39.29%) had scrotal exploration within 4 hours of presentation to the emergency unit, while 26 (46.43%) within 4 to 12 hours, and 8 (14.29%) had delay beyond 12 hours. The study found associated anomalies in the torsted testes which includes horizontal lie 9 (13.85%), long mesochium 5 (7.69%), hydrocele 4 (6.15%), and 1 (1.54%) each of hernia, varicocele, atrophy and patent processus vaginalis. There was no mortality and morbidity was limited to minor surgical site wound infection. **Conclusion:** High index of suspicion, prompt and adequate intervention were associated with high testicular salvage rate.

**Keywords:** Testicular torsion, Reaction-time, Salvage, Gangrene.

### INTRODUCTION

Testicular torsion was first diagnosed by a French surgeon Delasiauve in 1840. It occurs in every society and at all ages. High index of suspicion remain the key for making early diagnosis. Prompt and effective surgical intervention is essential to preserve testicular function. Delay in presentation or surgical intervention is more often associated with loss of orchids as a result of gangrene., Testicular torsion is commonly seen in the young. Sexual excitement, trauma, extremes of weather, severe extragonadal pain, are some of the precipitating factors. However, in some cases it occurs spontaneously, while in others the torsted

testis harbour congenital anomaly like maldesent, ectopia, high investing tunica, inversion of the testis and long mesochium among others. Sudden onset of testicular and abdominal pains and vomiting are the most common presenting symptoms. The testis is usually elevated, swollen and tender. Epididymo-orchitis, scrotal haematoma and strangulated inguinoscrotal hernia are some of the differential diagnosis which can be eliminated by thorough clinical examination. Ultrasonography may occasionally be required for evaluation. Though time is cardinal in preservation of testicular function, in our environment where there is poverty and ignorance, late presentation is common, worsened by unduly prolonged reaction-time as a result of over-stretched health facilities.

### MATERIALS AND METHODS

We retrospectively reviewed records of all patients presenting with testicular torsion at the

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University of Maiduguri Teaching Hospital (UMTH) between January 2008 to December 2011. For the purpose of this study, the reaction-time is defined as the time between patient presentation to our hospital to the time of scrotal exploration. The golden time is the clinical timing within which the testis is salvageable and this is usually taken to be 4hours from onset of symptoms. A total of 63 patients who underwent scrotal exploration of which 7 were excluded for incomplete data were studied. Information was obtained on the 56 patients (88.89% of all patients) from hospital records. Demographic data, clinical features, operative findings, treatment and outcome were obtained and analysed using SPSS version 18. Ethical approval was obtained from the Research and Ethics Committee of the hospital. All patients were resuscitated with intravenous fluids, parenteral antibiotics (ceftriazone and metronidazole) and analgesics ( pentazocine and diclofenac). Basic investigations of packed cell volume and urinalysis were done for all patients. Few had scrotal ultrasound scan which supported decision for scrotal exploration. Scrotal exploration were done under local (2% xylocaine), spinal or general anaesthesia.

**RESULTS**

In the four year study period a total of 56 patients (112 orchids) aged 11 to 35 years with mean of 23± 17.5 years were analysed. The peak age specific incidence occurred in the age group 11 to 20 (28; 50%). Cardinal symptoms at presentation are depicted in table 1, with testicular pain occurring in all patients followed by swelling (44; 78.57%) and nausea/vomiting (32; 57.14%). Other significant symptoms were seen in 21 (37.50%) which included discomfort, drowsiness, dysuria, fever and collapse.

Duration of symptoms before presentation varied (table 2) with 11 (19.64%) presented within 4 hours of onset, and 30 (53.56%) between 4 to 24 hours while 15(26.79%) presented beyond 24 hours. Twenty-two (39.29%) had scrotal exploration within 4 hours of presentation to the emergency unit, while 26 (46.43%) within 4 to 12 hours, and 8 (14.29%) had delay beyond 12 hours (table 3).

Most patients had right sided torsion 27 (48.21%), while 20 (35.71%) had left torsion and 9 (16.07%) had bilateral. Therefore a total

of 65 orchids were tortored. Out of 112 orchids operated upon, 65(100%) were tortored, 15(23.08%) were lost to gangrene and 50 (76.92%) were salvaged. Testicular salvage rate was 76.92%. However a total of 15 (23.08%) orchids were lost to gangrene, 10 and 5 on the right and left respectively.

Majority of the patients 41 (73.21%) presented during the cold season, harmattan (November to February). Other associated findings were inversion/transverse lie seen in 9 orchids, long mesochium in 5 and hydrocele in 4 orchids. Others are varicocele, hernia, atrophy and persistent processus vaginalis seen in one testis each. Scrotal exploration was done under general in 25(44.64%), spinal 23(41.07%), and local anaesthesia in 8(14.29%).

Table 1: Main presenting symptoms

Testicular pain	56(100%)
Swelling	44(78.5%)
Nausea/vomiting	32(57.14)
Discomfort	6(10.7%)
Dragging sensation	4(7.1%)
Fever	4(7.1%)
*others	7(12.5%)

\* Dysuria, drowsiness and collapse.

Table 2: Duration of symptoms (in hours)

<4	11(19.64%)
4-24	30(53.57%)
>24	15(26.79%)
Total	56(100%)

Table 3: Reaction time (time between presentation and exploration.)

<4	22(39.29%)
s4-12	26(46.43%)
>12	8(14.29%)
Total	56(100%)

**DISCUSSION**

Testicular torsion is the twisting of the spermatic cord. It is commonly seen in adolescence and young adults<sup>5</sup>. Predisposing conditions such as

sudden drop in temperature, long mesochium and testicular inversion were all noted in this study. However a curious finding is the presence of hydrocele, while varicocele, hernia, patent processus vaginalis and testicular atrophy seen in this study have been reported earlier.

The peak age specific incidence in our study is similar to the findings on the Jos Plateau study.<sup>5</sup>

The striking feature of this study is the interplay of delayed presentation and unduly prolonged reaction time within the hospital contributing to the high percentage of testicular loss to gangrene 15(23.08%) This is in contrast to a previous study that found delay to be outside the hospital.<sup>6</sup> However the prolonged reaction time might be an isolated institutional problem in the geopolitical zone of the study. During this study period the region was bedevilled by security unrest characterised by incessant dusk to dawn curfews that ultimately culminated into the declaration of state of emergency. Over the years the volume of emergencies from missile injuries took precedence over other emergencies. Delay outside the hospital can be attributed to poverty, ignorance and the peculiar security challenges as only 11(19.64%) presented within the golden 4 hours of onset of symptoms that is associated with excellent prognosis.

Pain and swelling are the predominant presenting features in conformity with the established findings over the centuries. However of particular interest are the constitutional symptoms of nausea/ vomiting occurring in 57%. This is higher than reported by Eaton et al. Once the diagnosis of testicular torsion is made, only basic investigations like PCV and Urinalysis were done to prevent unnecessary delay; moreover all the patients were young and fit for anaesthesia. All patients had broad spectrum antibiotics and analgesics.

There was no attempt at conservative management which entails external manual manipulative detorsion towards the median septum of the scrotum. All patients had scrotal exploration. However the study found delay in exploration as only 22(39.29%) had scrotal exploration within 4 hours of presentation, though this is higher than 14% reported by Ugwu et al.<sup>5</sup>

There was no mortality and morbidity was only minor surgical site wound infection in 5

patients, and a scrotal haematoma which was evacuated and wound healed on daily dressing. Orchidopexies were done in otherwise normal testes as a prophylactic measure because this study never found a single case of recurrent torsion following fixation during the four –year period of the study as opposed to findings by Sells et al<sup>9</sup>.

In conclusion, the study found delayed presentation and prolonged reaction-time as the main factors responsible for poor outcome. Therefore early presentation, high index of suspicion prompt and adequate intervention are essential for testicular salvage in acute scrotum<sup>10-15</sup>

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