ORIGINAL ARTICLE

Acute and intermittent testicular torsion: Analysis of presentation, management, and outcome in South East, Nigeria

FO Ugwumba[1,2], AD Okoh[2], KN Echetabu[2]

[1]Department of Surgery, Faculty of Medical Sciences University of Nigeria, [2]Department of Surgery, University of Nigeria Teaching Hospital, Enugu, Enugu State, Nigeria

Abstract

Background: Testicular torsion compromises the blood supply to the testes and may result in testicular loss or damage if not dealt with promptly. It can occur either as acute testicular torsion (ATT) or intermittent testicular torsion (ITT). This study examines the presentation, management, and outcome of adult testicular torsion.

Patients and Methods: During the period January 1999 and December 2009, 34 out of 59 patients treated for testicular torsion, who had complete records, were evaluated. Operating theater and urology ward admission registers were used to identify patients.

Results: Age range was 16–50 years. Of the 34 patients, 11 (32.4%) were between 26 and 30 years old, while 16 (47.1%) were between 16 and 25 years old. Mean age was 27 years. Scrotal pain of varying severity was noted in all patients; there was associated vomiting in 21% of cases and abdominal pain in 38% of cases. Clinical diagnosis was ATT in 12 (35.3%) patients and ITT in 22 (64.7%) patients. In the ATT group, only one patient (8.3%) presented within 6 h of onset of symptoms. In the ITT group, 3 patients (13.6%) presented within 1 month of onset of symptoms while 7 (31.8%) of patients presented between 1 and 6 months after the onset of symptoms. Testicular salvage rate was 58.3% for ATT. Surgical intervention occurred within 3 h in the ATT group in 7 patients (58.3%) and in 5 patients (41.7%) within 3–6 h of onset of symptoms. In the patients with ITT, 12 patients (54.5%) were operated upon within 1 month of presentation. Preoperative external manual detorsion was performed in 1 patient.

Conclusion: Late presentation was observed, especially in the intermittent variety. Delay occurred both at pre- and intra-hospital phases. Testicular salvage rate may be improved by physician/health worker and community enlightenment. Adoption of local anesthetic may reduce intrahospital delay.

Key words: Acute, intermittent, management, Nigeria, orchidectomy, testicular loss, testicular torsion

Date of Acceptance: 18-Nov-2015

Address for correspondence:
Dr. FO Ugwumba,
Department of Surgery, University of Nigeria Teaching Hospital,
Enugu 400001, Enugu State, Nigeria.
E-mail: fredugwumba@gmail.com

Access this article online

Quick Response Code:

Website: www.njcponline.com

DOI: 10.4103/1119-3077.179291

Introduction

Testicular torsion or rotation with twisting of the spermatic cord is a surgical emergency[1,2] that if sustained, may result

How to cite this article: Ugwumba FO, Okoh AD, Echetabu KN. Acute and intermittent testicular torsion: Analysis of presentation, management, and outcome in South East, Nigeria. Niger J Clin Pract 2016;19:407-10.

in a testicular loss from infarction, but even salvaged testes may undergo atrophy later.[3] The incidence of torsion in males <25 years of age is one in 4000.[4]

Considering the serious consequences of testicular torsion, whether acute or intermittent,[5] the considerable interval of up to 14 months before presentation shown previously,[6] we thought it necessary to reexamine this condition.

This study examines the current status of presentation, management, and outcome of adult testicular torsion.

Patients and Methods

Between January 1999 and December 2009, 34 out of 59 patients treated for testicular torsion, at two referral hospitals in South East, Nigeria, and who had complete records, were evaluated. Research Ethics Committee approval was obtained for this study. Operating theater and urology ward admission registers were used to identify patients.

Data collected were the patients' demographics, clinical features, investigations, treatment given, operative findings, problems with management, and outcome.

The data using Statistical Package for Social Sciences (SPSS version 16, SPSS Inc. Chicago IL, USA).

Diagnosis of testicular torsion was made clinically, after history and physical examination. Samples for full blood count, urinalysis, and urine microscopy culture and sensitivity were taken in some cases but did not delay the decision to perform scrotal exploration.

Results

The age range was 16–50 years. Of the 34 patients studied, 11 (32.4%) were between 26 and 30 years old. While 16 (47.1%) were between 16 and 25 years old. Mean age was 27 years.

Scrotal pain of varying severity was noted in all patients; there was associated vomiting in 21% of cases and abdominal pain in 38% of cases. Clinical diagnosis was acute testicular torsion (ATT) in 12 (35.3%) patients and intermittent testicular torsion (ITT) in 22 (64.7%) patients. Pain was right-sided in 13 patients, left-sided in 10, and bilateral in 11 patients. In the ATT group, only 1 patient (8.3%) presented within 6 h of onset of symptoms, while 7 patients (58.3%) presented within 7–24 h of onset of symptoms.

In the ITT group, 3 patients (13.6%) presented within 1 month of onset of symptoms while 7 (31.8%) of patients presented between 1 and 6 months after the onset of symptoms. Testicular salvage rate was 58.3% for ATT.

All patients had scrotal exploration; surgical intervention occurred within 3 h in the ATT group in 7 patients (58.3%)

Table 1: Age; provisional diagnosis cross-tabulation

Age (years)	Acute testicular torsion	Recurrent testicular torsion	Total
16-20	6	3	8
21-25	2	5	7
26-30	2	9	11
31-35	1	2	3
36-40	1	1	2
41-45	0	1	1
46-50	0	1	1
Total	12	22	34

Table 2: Onset-presentation interval (acute testicular torsion group)

Serial number	Time interval	Frequency	Testicular gangrene
1	0-6 h	1 patient	Nil
2	7-12 h	5 patients	Nil
3	13-24 h	2 patients	Nil
4	25-48 h	2 patients	Unilateral gangrene in 1 patient
5	97-144 h	2 patients	Unilateral gangrene in 1 patient
6	7 days	1 patient	Gangrenous testes
7	8 days	1 patient	Gangrenous testes
8	10 days	1 patient	Gangrenous testes
Total		12 patients	

Table 3: Clinical features; acute testicular torsion

Symptoms/signs	*n* (%)
Severe scrotal pain only	2 (16.6)
Scrotal pain and abdominal pain	3 (25)
Scrotal pain and inguinal pain	4 (33.3)
Scrotal pain and thigh pain	3 (25)
Prior sexual intercourse/arousal	2 (16.6)
associated trauma	1 (8.3)
Vomiting	5 (41.7)
Scrotal swelling	12 (100)

Table 4: Onset-presentations interval intermittent testicular torsion

Serial number	Time interval	Frequency
1	<1 month	3 patients
2	1-3 months	4 patients
3	4-6 months	3 patients
4	1-2 years	7 patients
5	3-6 years	4 patients
6	>6 years	1 patient
Total		22 patients

and in 5 patients (41.7%) within 3–6 h of onset of symptoms. In the patients with ITT, 12 patients (54.5%) were operated upon within 1 month of presentation.

Preoperative external manual detorsion was performed in one patient. Local anesthesia was used in 19 patients (56%), general anesthesia in 14 patients (41.2%), and subarachnoid block in 1 patient (2.9%).

Follow-up was poor with 56% lost to follow-up 4 weeks after surgical intervention.

Discussion

Testicular torsion leading to testicular loss is catastrophic and continues to occur.[5] When prolonged, torsion often results in infarction, but testes salvaged immediately by surgery may undergo atrophy later.[3,6,7] The age range observed was 16–50 years (mean 27 years) with 73% of the patients older than 20 years [Table 1]. This agrees with the findings of Udeh,[6] who noted majority (57%) of patients older than 20 years.

Concerning age incidence and mean age, our findings are generally in agreement with other papers from our locality.[8,9]

In the ATT group, only 1 patient (8.3%) presented within 6 h of onset of symptoms, while 9 patients (75%) presented >24 h after onset of symptoms [Table 2].

The most common symptom was scrotal pain [Table 3]. Testicular salvage rate was 58.3% and is similar to earlier reports.[8,9]

All cases of testicular gangrene were seen in those presenting after 24 h of onset of symptoms. It has been shown that long interval between onset and presentation is associated with poor outcome;[5,10] the reasons for this delay are not clear but may be related to embarrassment, poor access to health facilities, and low index of suspicion on the part of general care physicians.[5,10,11]

Baruga and Guyton Munabi have shown that there is a need for greater education of lower cadre health care workers who are often the first to see these patients.[12]

It is believed that efforts toward enlightening health care professionals and young males should serve to reduce the associated testicular loss associated with delays in presentation, diagnosis, and treatment.[8,11]

Concerning those with ITT, the onset presentation interval was 1 month to 6 years [Table 4]. This interval is of concern, considering the resultant decline of spermatogenic potential and impaired endocrine function,[3] this has been shown by earlier workers who biopsied involved testes prior to fixation.[13]

Often, this type of torsion is seen and not treated correctly with the required urgency rather patients may be reassured and given analgesics which frequently results in unpleasant outcomes.[14]

It is instructive that majority of our patients had ITT rather than acute torsion ATT and had long duration of symptoms prior to presentation.

This requires emphasis in training institutions and continuing medical education meetings. This intervention is needed considering that, that the two most important factors which determine testicular salvage are the duration of torsion and degree of twisting/torsion,[15] all effort should be made to modify the former as the degree of twist is probably not modifiable.

Orchidectomy was performed in 3 patients (15.8%) giving a salvage rate of 84.2%. It should be noted, however, that virtually all these salvaged testes had appreciably reduced volume as compared to the contralateral testes.

Anatomical predisposing factors observed include bell clapper deformity, long mesorchium, and undescended testes. These were seen in 8 patients (23.5%) of cases which are lower than the 60% reported in an earlier study.[9]

With regard to treatment offered, all patients had scrotal exploration and orchidopexy with contralateral orchidectomy where indicated.

All patients in the ATT group had surgery within 3 h of presentation. Scrotal exploration within an hour is a more desirable goal as the consequences of delay >6 h results in rapidly reducing salvage rates and approach zero after 24 h.[16] The reasons for the intrahospital delays were not clear. We suspect that delays in arranging regional or general anesthesia may have been contributory as only 56% of patients had their procedure done under local anesthesia. Scrotal exploration is easily accomplished under local anesthesia and is recommended as this would reduce delays associated with arranging regional or general anesthesia in busy hospitals.[8]

Conclusion

We encourage an increased emphasis on both acute and intermittent torsion in the curricula of medical schools and those of allied health professionals. Health talks in secondary schools would also be of value in enlightening the target population.

It is also recommended that torsion education (acute and intermittent) be included as mandatory content on

continuing education meetings for all doctors, nurses, and allied health workers. This is because, in the community setting, the patient often presents to the non-doctor health care worker who is often more accessible.

Financial support and sponsorship
Nil.

Conflicts of interest
There are no conflicts of interest.

References

1. Cuckow PM, Frank JD. Torsion of the testis. BJU Int 2000;86:349-53.
2. McAndrew HF, Pemberton R, Kikiros CS, Gollow I. The incidence and investigation of acute scrotal problems in children. Pediatr Surg Int 2002;18:435-7.
3. Bartsch G, Frank S, Marberger H, Mikuz G. Testicular torsion: Late results with special regard to fertility and endocrine function. J Urol 1980;124:375-8.
4. Anderson JB, Williamson RC. Testicular torsion in Bristol: A 25-year review. Br J Surg 1988;75:988-92.
5. Rampaul MS, Hosking SW. Testicular torsion: Most delay occurs outside hospital. Ann R Coll Surg Engl 1998;80:169-72.
6. Udeh FN. Testicular torsion: Nigerian experience. J Urol 1985;134:482-4.
7. Scott JH 3rd, Harty JI, Howerton LW. The management of testicular torsion in the acute pediatric scrotum. J Urol 1983;129:558-60.
8. Njeze GE. Testicular torsion: Needless testicular loss can be prevented. Niger J Clin Pract 2012;15:182-4.
9. Ugwu BT, Dakum NK, Yiltok SJ, Mbah N, Legbo JN, Uba AF, *et al.* Testicular torsion on the Jos Plateau. West Afr J Med 2003;22:120-3.
10. Barada JH, Weingarten JL, Cromie WJ. Testicular salvage and age-related delay in the presentation of testicular torsion. J Urol 1989;142:746-8.
11. Muguti GI, Kalgudi R. Torsion of the testis: Review of clinical experience in Zimbabwe. Cent Afr J Med 1994;40:119-22.
12. Baruga E, Guyton Munabi I. Case series on testicular torsion: An educational emergency for sub-Saharan Africa. Pan Afr Med J 2013;14:18.
13. Sellu DP, Lynn JA. Intermittent torsion of the testis. J R Coll Surg Edinb 1984;29:107-8.
14. Quddus MB, Mahmud SM. Testicular torsion: A diagnosis not to be missed. J Pak Med Assoc 2011;61:391-2.
15. Visser AJ, Heyns CF. Testicular function after torsion of the spermatic cord. BJU Int 2003;92:200-3.
16. Wampler SM, Llanes M. Common scrotal and testicular problems. Prim Care 2010;37:613-26, x.