

TESTICULAR TORSION: EXPERIENCE IN THE MIDDLE BELT OF NIGERIA

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Objective To determine the fate of the testis affected by testicular torsion (TT) in relation to the duration of the symptoms and to know the relative frequency of testicular torsion in the middle belt of Nigeria.

Patients and Methods All patients presenting with TT presenting at the University of Ilorin Teaching Hospital, Ilorin, Nigeria between January 1989 and December 1998 were reviewed retrospectively by analyzing data from the medical records department, operating theatre and the surgical wards.

Results Ninety-two patients with clinical suspicion of TT were reviewed. In 87 patients TT was confirmed at surgical exploration. Three were diagnosed as epididymo-orchitis, while two patients absconded. The patients' age ranged from 6 months to 50 years (mean age 22.1 ± 9 years). Eighty-one cases (93.1%) were unilateral, 36 (41.4%) right-sided, while 45 (51.7%) were left-sided. Six patients (7%)

had bilateral disease which was synchronous in one and asynchronous in five patients. Seventy-five of the 87 testes (86.2%) were found to be viable at operation, while 12 (13.8%) were grossly non-viable and were removed. Orchidopexy was performed on testes found to be viable as well as on the contralateral testis in the case of unilateral cases.

Conclusion Testicular torsion is the second most frequent urological emergency in our institution. In this series, the pathology was more prevalent on the left side with a salvage rate of 86.2% which can still be improved. Emphasis should be placed on the correct diagnosis as opposed to other acute scrotal conditions, particularly epididymo-orchitis and epididymitis with which TT is often confused.

Keywords testicular torsion, salvage rate

INTRODUCTION

Testicular torsion is still a problem worldwide, and the middle belt of Nigeria provides no exemption. The clinical awareness is low, hence our interest in this subject. This review was done to assess our practice and the salvage rate. The viability of the twisted testes is directly related to the time elapsed between the onset of symptoms and exploration. If operated on within 5 hours of onset of the symptoms, 80% of the testes remain viable, but after 10 hours only 20% are viable unlike after 24 hours when all twisted testes become infarcted.¹ A prolonged delay in diagnosis and treatment almost always leads to an irreversible damage (infarction) and subsequent loss of the testis. The effect of an undue delay is infertility, which may occur as a complication of testicular loss on the affected

side or from an inhibitory effect on the function of the contralateral testis.²

Testicular torsion is a very common urological problem in this sub-region and it has been described to occur in all ages.^{3,4} Papers have been published from different parts of Nigeria with no known report from the middle-belt region.

Our experience in the middle belt of Nigeria shows that it is a major urological emergency. This paper reports on a retrospective study over a period of then years of the records of 87 patients with proven torsion of the testis treated at the University of Ilorin Teaching Hospital in the middle belt of Nigeria between January 1989 and December 1998. The objectives of this review are to determine the fate of the testis in relation to the duration

Table 1: Age Distribution of 87 Patients with Torsion of the Testis

Age	No. of Patients
0 – 10 years	3
11 – 20 years	33
21 – 30 years	39
31 – 40 years	6
41 – 50 years	6
Total	87

Table 2: Clinical Features

Symptoms and Signs	No. of Patients
Insidious onset of pain	23
Scrotal pain	81
Scrotal swelling	69
Pain confined to the lower abdomen	18
Pain confined to the groin	12
Vomiting	12
Nausea	38

of symptoms and to know the relative frequency of testicular torsion in this region.

PATIENTS AND METHODS

A ten-year retrospective study of records of all patients with diagnosis of testicular torsion (TT) who presented at the University of Ilorin Teaching Hospital between January 1989 and December 1998 was carried out. The data were collected from the medical records department, the operating theatre and the surgical wards. Patients with proven testicular torsion confirmed at scrotal exploration were included in the study. The age distribution, the relative frequency, previous episodes of recurrent testicular pain, operative findings and treatment modalities were recorded in a proforma designed for this study. Data were entered into a computer program (EPI info 6) for analysis.

RESULTS

Ninety-two patients met the inclusion criteria and were reviewed. Testicular torsion was confirmed by surgical exploration in 87 cases. Of the remaining five cases, three had been misdiagnosed and proved to be epididymo-orchitis while the remaining two patients absconded from treatment. The majority of the patients (63.2%) were aged 21 years and above with 12 patients being older than 30 years. The mean age was 22.1 years \pm 9 years (Table 1). In 81 cases TT was unilateral; it was on the right side in 36 (41.4%) and on the left in 45 (51.7%) patients. Six (7.0%) cases were bilateral out of which one was synchronous and five asynchronous. All cases of testicular torsion were explored. Seventy-five testes (86.2%) were found to be viable at operation while 12 (13.8%) were non-viable and thus removed. Orchidopexy was performed on the viable testis, as well as on the contralateral testes in unilateral cases. All the cases, except one extravaginal case in a six-month-old boy were intravaginal torsion. There is a slight preponderance of the left (45 testes or 51.7%) over the right side (36 or 41.4%).

The most common symptom was scrotal pain, which was mild to moderate in severity (Table 2). Eighty-one patients (93.1%) presented with scrotal pains, 18 (20.7%) complained of pain confined to the lower abdomen while 12 (13.8%) complained of pain confined to the groin. Vomiting was associated with the pain in 12 (13.8%) patients, and 38 patients (43.7%) had associated nausea. Only four patients (4.6%) had had previous episodes of scrotal pains, which resolved on simple analgesics or spontaneously. Seventy-nine patients (90.8%) had scrotal swellings with varying degrees of redness. The eighty-one patients who presented with unilateral involvement had acute torsion. Four of these had had recurrent attacks of testicular pains. All these patients had scrotal exploration. Twelve testes out of 87 were gangrenous with a salvage rate of 86.2%.

In the cases of gangrenous testis the lag period before presentation was generally between 2-20 hrs, while the lag period before operation was less than 16 hrs. The interval between the onset of symptoms and presentation at our emergency room varied from one to 480 hours (mean 39.7 \pm 33.1 hours) while that between presentation and operation varied from two to 288 hours (mean

Table 3: Salvage or Loss with Preoperative Lag Period in Patients with Acute Testicular Torsion

Total Lag Period	Testicular Salvage	Testicular Loss (Gangrene)
0 - 24 hours	38	-
24 - 48 hours	17	1
48 - 72 hours	12	2
72 - 96 hours	5	3
> 96 hours	3	6
Total	75	12

27.5 ± 20.2 hours). All patients operated on within 24 hours of onset of symptoms had viable testes while those operated on after 48 hours had a 33.3% salvage rate (Table 3).

DISCUSSION

Testicular torsion is a common condition mostly seen in adolescent males. It is one of the commonest urological emergencies encountered at the University of Ilorin Teaching Hospital. An average of nine cases of testicular torsion is managed per year at our institution.

In our study, the majority of the patients (63.2%) were aged 21 years and above while 12 patients (13.8%) were older than 30 years. Similar findings were reported from this country by Udey³ (Enugu / Eastern Nigeria) and Osegbe⁴ (Lagos / South Western Nigeria). However, Bartsh⁵ (Europe), Baker⁶ (United States), Klufio⁷ (Accra) and Nposong⁸ (Ibadan / South Western Nigeria) reported a different age distribution in their series. Perhaps, this variation within a country and between different countries of the world is rather environmental than genetic. Further research in this respect is needed.

Similar to the findings of Altaffer⁹ we observed a high risk of testicular loss in older patients. Ten of the 12 patients who lost their testes were aged 22 years and above while the remaining two were 16 and 18 years old.

The preponderance of a left-sided pathology over the right side found in our study has been ascribed to the longer length of the left

spermatic cord¹⁰. This is similar to other published reports worldwide^{7,10,11}.

The relationship between testicular salvage or loss and the preoperative lag period is shown in Table 3. Out of the 87 cases explored, 15 cases were found to be high investing vagina while a horizontal lie was found in 10 cases. No abnormalities were mentioned in the remaining 62 cases. The salvage rate of 82.6% is similar to most published works^{6,9,11}.

Torsion of the testicle in the neonate is uncommon¹². It is, therefore, not surprising that no case of neonatal testicular torsion was encountered in our series. The reason may be due to problems associated with a prompt diagnosis of this condition that may occur in utero, at the time of birth or post partum. Neonates with acute scrotal pain and swelling represent a difficult diagnostic problem. Sophisticated equipment aiding in the diagnosis of this condition like Doppler ultrasound and Perchnetate Scanning is not available in our sub-region. This will re-emphasize the necessity of a careful and complete examination of the newborn immediately after delivery.

The interval between the onset of the symptoms and the operation depends on a number of factors in our sub-region. Some of our patients have mild recurrent attacks of pain which may be treated by self-medication or which might be misdiagnosed by other health providers and treated as cases of epididymo-orchitis or orchitis. Besides, the poor financial situation of the majority of patients in the sub-region may account for their late presentation.

In conclusion, testicular torsion is the second most frequent urological emergency seen in our institution and the characteristics and salvage rate compare favourably with other published series in other parts of Nigeria and the world at large. There is still the need for continuing medical education on prompt recognition and diagnosis of this condition to differentiate it from other acute scrotal lesions, particularly epididymo-orchitis and epididymitis. We advocate an exploration of the testis in all cases of "diagnostic doubts" since there is nothing lost but much is gained by saving the testis. Testicular torsion affects an older age group in this sub-region compared to other parts of the country and with a salvage rate of 82.6%, it is hoped that continuing medical education and prompt recognition and dia-

gnosis of this condition will further improve this rate.

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REFERENCES

1. Bullock N. *Benign Scrotal Disorders*. In: Bullock N, Sibley G, Whitaker R (Eds.): *Essential Urology*, 2nd ed., Longman Group UK, chapt. 22, pp. 320-322, 1994.
2. Williamson RCN, Thomas WEG. Sympathetic orchioepithia. *Ann Royal Coll Surg Engl* 1984, 66:264-266.
3. Udey FN. Torsion of the testis: Nigerian experience. *J Urol* 1985, 134:482-4.
4. Osegbe DN, Ogunkua O, Magoha GA. Testicular torsion rate in Nigerians. *Tropical and Geographical Medicine* 1987, 39:372-375.
5. Bartsh G, Frank S, Marberger H, Mikuz G. Testicular torsion: Late results with special regard to fertility and endocrine function. *J Urol* 1980, 124:375-378.
6. Baker K, Raper FP. Torsion of the testis. *Br J Urol* 1976, 63:456-476.
7. Klufio GO, Quartey JKM. Testicular torsion in Ghanaians: characteristics and salvage rate. *Ghana Med J* 1994, 30:743-745.
8. Nkposong EO. Torsion of the testis in Ibadan: Report of 31 cases and review of the literature. *Ghana Med J* 1972, 11:252-255.
9. Altaffer LF III. Testicular torsion in men. *J Urol* 1980, 123:37.
10. Williamson RCN. Torsion of the testis and allied conditions. *Brit J Surg* 1976, 63:456-476.
11. Chapman RH, Walton AJ. Torsion of the testis and its appendages. *Brit Med J* 1972, 1:164-166.
12. Giagomantonio M, Lau H. Testicular torsion in new born. *Can J Surg* 1981, 24:14-15, 18.

Editorial Comment:

In this interesting ten-year retrospective study the authors well stress the importance of the exploration of the testis in all cases of diagnostic doubts always performing a bilateral orchidopexy in case of testicular torsion with viable testis. The findings reported by the authors are similar if compared with other authors of the same country (Udey et al., Enugu – Eastern Nigeria; Osegbe et al, Lagos – South Western Nigeria). Further research to determine the reasons for variation of the results between different countries is needed. According with the authors, a continuing medical education and the prompt recognition and diagnosis of testicular torsion are mandatory to improve the salvage rate reducing the lag period between the onset of the symptoms and the operation.

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RESUME

Torsion du Testicule: Expérience de la Ceinture Moyenne du Nigéria

Objectif Déterminer la vitalité du testicule affectée par une torsion du cordon spermatique en relation avec la durée des symptômes et de connaître la fréquence relative de la torsion dutesticule dans la ceinture moyenne du Nigéria. **Patients et Méthodes** Tous les dossiers des patients qui se sont présentés à l'Hôpital universitaire de Ilorin, Nigéria et reçus entre Janvier 1989 et Décembre 1998 ont été revus rétrospectivement. Les données ont été collectées à partir des archives médicales, du bloc opératoire et des unités d'hospitalisation chirurgicale. **Résultats** Les dossiers de quatre vingt deux patients ayant eu une suspicion clinique de torsion du cordon ont été revus. La confirmation a été faite à l'exploration chirurgicale dans 88 cas. Une orchi-épididymite a été diagnostiquée dans trois cas. L'âge moyen des patients était de 22,1+ 9 avec des extrêmes de 6 mois et 50 ans. La torsion était unilatérale dans quatre vingt et un cas (93.1%). Il s'agissait du côté droit dans 36 cas (41.4%) et du côté gauche dans 45 cas (51.7%). Six patients avaient une forme bilatérale (7%) dont une forme

synchrone et 5 formes asynchrones. Soixante-quinze des 87 testicules (86,2%) étaient viables à l'exploration tandis que 12 (13,8 %) étaient nécrosés et ont été enlevés. Une orchidopexie a été pratiquée sur tous les testicules retrouvés viables et sur le testicule controlatéral dans les formes unilatérales. **Conclusion** La torsion du cordon spermatique est la seconde urgence urologique dans notre institution. Dans cette série, le côté gauche était plus atteint. Le testicule a été sauvé dans 86,2 % mais ce taux peut être amélioré. D'où l'importance du diagnostic correct de la torsion du cordon spermatique qu'il faut distinguer des autres causes de bourses aiguës particulièrement l'orchio-épididymite et l'épididymite qui peuvent souvent prêter à confusion.

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