

# Testicular torsion: Needless testicular loss can be prevented

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## Abstract

**Background:** The risk of losing the testis is an ever present threat in patients with testicular torsion, who delay before presenting to the surgeon. A retrospective study was carried out to audit patients with acute scrotal pain who came to the Trans Ekulu Hospital Enugu, the promptness of offering them surgical treatment and the results.

**Materials and Methods:** Patients operated upon for suspected torsion of the testis at Trans Ekulu Hospital Enugu over a 10-year period (1993–2003) were studied. The intervals between the onset of scrotal pain and presentation at the hospital were recorded. The duration of scrotal pain, findings on examination of the scrotum, time of starting surgical operation, and the number of viable testes seen intraoperatively were documented.

**Results:** Twenty-two patients were found to have undergone emergency scrotal exploration and their ages ranged from 10 to 38 years with a mean of 22.7 years. Eight of these patients came within 3 hours of onset of scrotal pain, one patient came within the 6 hours, and the rest came late. These patients were operated upon shortly after arrival at the hospital. Sixteen patients (72.7%) had testicular torsion, 12 testes were viable, and 4 nonviable.

**Conclusion:** Majority of our patients presented reasonably early. Those who had testicular loss came late. However, some who came late still had viable testes.

**Key words:** Health education, orchidectomy, orchidopexy, testicular loss, torsion

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## Introduction

Testicular torsion leading to orchidectomy is a major catastrophe for the patient and continues to occur.<sup>[1]</sup> It is characterized by excruciating one-sided testicular or scrotal pain, followed by swelling, and emergency surgical treatment is required for this condition. Each year, 1 in 4000 men younger than 25 years suffers testicular torsion.<sup>[2]</sup> The cause of the majority of cases is the bell clapper deformity, an anatomic abnormality that is present in around 12% of males,<sup>[2]</sup> but trauma<sup>[3]</sup> and increase in testicular volume<sup>[4]</sup> can cause torsion. Early diagnosis and definitive surgical treatment are the keys to avoid testicular loss. All prepubertal and young adult males with acute scrotal pain should be considered to have testicular torsion until proven otherwise.<sup>[2]</sup> Epididymitis/orchitis is much less common

in young males, and the diagnosis should be made with caution in this group.

Even though these facts have been known for a very long time, surgical literature is replete with reports of delayed presentation, misdiagnosis, and wrong treatment leading to testicular wastage.<sup>[5,6]</sup> In view of these continuing reports about late presentation and consequent orchidectomy for testicular infarction, a decision was made to audit the presentation, clinical assessment, and outcome of treatment of patients with suspected testicular torsion treated at the Trans Ekulu Hospital Enugu. The aim of this audit was to use the findings to contribute to efforts aimed at reducing the incidence of testicular loss from torsion.

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## Materials and Methods

Every patient who had exploration of the scrotum for suspected torsion of the testis at Trans Ekulu Hospital Enugu over a 10-year period (1993-2003) was identified from the theater register. All these patients were found to have been assessed by the author. The interval between the onset of scrotal pain and presentation at the hospital (for every patient) was recorded. The nature of the scrotum and contralateral testis was also noted. The time of starting operation was taken as the time of scrotal incision.

At operation, twisted testes were untwisted and if viable, fixed with nonabsorbable suture; or excised if nonviable. The contralateral testes were also fixed, because about 40% of patients who suffer torsion have the predisposing anatomical abnormality bilaterally. If at scrotal exploration, the patient was found to have epididymo-orchitis rather than torsion, orchidopexy was not done.

## Results

In all, 22 patients were found to have undergone emergency scrotal exploration. All their case records were retrieved and studied. Their ages ranged from 10 to 38 years with a mean of 22.7 years. Of these 22 patients studied, 16 (72.7%) had testicular torsion, out of which, 12 had viable testes

and 4 nonviable. One patient had atrophic testis on the contralateral side and another, an empty contralateral hemiscrotum due to previous orchidectomy [Table 1]. Six (27%) had epididymo-orchitis clinically and were excluded from the study.

The salvage rate of twisted testis depended on the time interval between onset of symptoms and presentation to the surgeon. While one patient came as early as 20 minutes after the onset of symptoms, another waited for as late as 6 weeks [Table 1]. Information collected from the records showed that these patients underwent scrotal exploration in less than 2 hours of arrival at the hospital.

## Discussion

Testicular torsion is thought to be the most frequent among adolescents with 65% of cases presenting between 12 and 18 years of age.<sup>[7]</sup> Contrary to this, majority of the patients (68.75%) with testicular torsion in this study were 20 or more years old. There is no ready explanation for this disparity, although Udeh had noted a similar result in a previous study in Enugu.<sup>[8]</sup>

A striking finding of this audit was that 56% of the patients came within 6 hours of feeling scrotal pain and that all these patients had scrotal exploration in less than

**Table 1: Age of patients, interval between onset of symptoms and presentation, physical findings and operative procedure**

Name	Age in years	Side of scrotal pain	Delay before presentation	Comments on the affected side	The other testis	Operation
A.O.	23	Left side	2 weeks	Left testis Gangrenous	Normal	Left orchidectomy Right orchidopexy
E.G.	30	Left side	1½ months	1. Gangrenous testis 2. Swollen scrotum	Normal	Right orchidopexy Left orchidectomy
N.C.	22	Left side	2 weeks	1. Swollen scrotum 2. Gangrenous left testis	Normal	Right orchidectomy Left orchidectomy
M.J.I.	26	Right side	1 month	Swollen scrotum Gangrenous testis	Normal	Right orchidectomy
A.J.	28	Right side	13¾ hours	1. Oblique lie 2. Normal testis	Atrophic	Right orchidopexy
N.C.	19	Right side	2 weeks	Normal testis	Normal	Bilateral orchidopexy
O.O.	28	Right side	2 hours	Recurrent pain Normal testis	Normal	Bilateral orchidopexy
I.P.	38	Right side	6 hours	Normal testis	Normal	Bilateral orchidopexy
O.N.	16	Left side	2 hours	Positive Prehn's Transverse lie	Normal	Bilateral orchidopexy
N.N.	12½	Left side	3 hours	Normal left testis	Normal	Left orchidopexy
O.C.	17	Right side	3 hours	Normal testis	Normal	Bilateral orchidopexy
O.C.	26	Left side	2 days	Normal testis	Empty hemi Scrotum	Left orchidopexy
O.S.	10	Right side	2 hours	Normal testis	Normal	Bilateral orchidopexy
I.A.	26	Right side	1 hour	Normal	Normal	Bilateral orchidopexy
A.I.	20	Right side	1½ hours	Normal	Normal	Bilateral orchidopexy
O.C.	22	Left side	20 mins	Normal	Normal	Bilateral orchidopexy

2 hours after arrival at the hospital [Table 1]. Twelve (75%) had viable testes, unlike the findings of Osegbe *et al.*<sup>[6]</sup> where only 27% had viable testes due to delay in presentation. Rampaul and Hosking reviewing 22 patients in the United Kingdom also noted lateness in presentation as 62% of their came after 6 hours of onset of pain. It is known that early presentation and diagnosis and prompt surgical intervention may reverse testicular ischemia and avert unnecessary orchidectomy. This early diagnosis may involve the use of Doppler ultrasound<sup>[9]</sup> where diagnosis of testicular torsion is in doubt and facilities are available. The diagnosis using this investigative tool is based on the finding of decreased or absent blood flow on the affected side.<sup>[2]</sup> Delay on the other hand may lead to progressive, time-dependent testicular damage because twisting of the testicle causes venous occlusion and engorgement as well as arterial ischemia, leading to infarction of the testicle. How tightly the testicle is twisted appears to correlate with how quickly the testicle becomes nonviable from ischemia. In this study, four patients (25%) had gangrenous testes and all came more than 24 hours after the onset of scrotal pains. Of the patients who presented late [Table 1] surprisingly, one had earlier undergone orchidectomy and another had an atrophic contralateral testis after previous scrotal pain. These two patients however had viable testes at operation. They may have had incomplete torsion or spontaneous untwisting. Factors such as incompleteness of vascular occlusion, spontaneous untwisting, and degree of twist are known to affect the ischemic process.<sup>[1]</sup> According to Wampler, there is an excellent chance (90%) of saving the testicle if treated within 6 hours; within 12 hours the rate decreases to 50%, within 24 hours is 10%, and after 24 hours the rate approaches 0.<sup>[10]</sup>

A patient in this study had atrophy of one testis when presenting with testicular pain in the contralateral testis, for which he had orchidopexy. This may have resulted from intermittent torsion. Some patients are known to have episodes of recurrent testicular pain from time to time. These episodes are probably due to intermittent torsion.<sup>[11]</sup> This may also be dangerous, because biopsies of the testes at times of orchidopexy in some of these patients had demonstrated peritubular fibrosis and frank testicular atrophy, both of which result in azoospermia and infertility.<sup>[11]</sup> For these reasons, patients with a history suggesting intermittent torsion are advised to undergo bilateral orchidopexy.<sup>[12]</sup> This reduces the risk of testicular infarction.<sup>[10]</sup>

To reduce testicular loss, surgeons need to focus attention on public health education to reduce the time wasted between onset of testicular pain and surgical intervention. This effort should include public lectures in places where young males are found in great numbers, e.g., schools, military, and police barracks; drawing attention to the serious nature of acute scrotal pain even for short period of time, and the consequences of neglecting it. Besides, during continuing medical education programs for doctors, emphasis should be stressed on the need for early referral of young patients with acute scrotal pain to the surgeon to avoid needless testicular loss. This is important because one of our patients, who had orchidectomy, had actually been receiving treatment from a physician for epididymo-orchitis. In addition, nurses should be encouraged to give priority to patients presenting at the accident and emergency department with scrotal pain. These patients should be referred to the surgical team without delay. A plea is finally made for these patients to be operated upon in the accident and emergency theater with local anesthetic. This step will eliminate the time taken to transfer these patients to the ward and also to secure a space in the hospital's main operating theater.

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