

## Research Article

# Age, Duration of Symptoms, and Degree of Twists Red are Flag in Patients with Torsion of Testis?

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## Abstract

**Objective:** To find out if patient's age, duration of symptoms and degree of twists relate to severity of testicular ischemia in patients with testicular torsion.

**Methodology:** This cross sectional study was conducted from January 2017 to December 2019. Diagnosis of testicular torsion was made on clinical grounds. All patients underwent surgery after initial optimization. Outcome of interest was testicular salvage/orchidectomy.

**Results:** A total of 19 patients were operated. In 16 patients left side was involved. Median age was 10.5 years, median duration of symptoms was 60 hours. In four patients torsion occurred in undescended testis. Total degree of twist varied from 1800-10800. A total of 16 patients underwent orchidectomy (n=3 in undescended testis and n=13 in scrotal testis) as testis were black in appearance and necrotic. Histopathology revealed complete infarction. Testicular salvage was possible in only 3 patients. Non salvageable testes had mean duration of symptoms of  $75.6 \pm 16.4$  hours; age  $62.5/-14$  months and degree of twists  $7480 \pm 60.1$ .

**Conclusion:** Patient's age, duration of symptoms & degree of twists in context of torsion of testes were not found related to testicle ischemia. However, a data with large number of patients is required to find out the statistical significance of these variables.

**Keywords:** Torsion; Testes; Degree of twists

## Introduction

Testicular torsion is a common Paediatric emergency, in case of delay or misdiagnosis can lead to loss of affected testes. It accounts for 10% to 15% of acute scrotal conditions in children [1,2]. Proper clinical assessment is mandatory to avoid testicular loss and eventual impaired fertility. Many studies have shown that testicular infarction begins to appear within 2 h of onset of TT, irreversible damage occurs after 6 h, and complete infarction is established by 24 hour but we have found variation in results. The purpose of this study is to observe if patient's age, duration of symptoms and degree of twists relate to severity of testicular ischemia in patients with testicular torsion

## Materials and Methods

The cross sectional study was conducted at National Institute of child health Karachi from January 2017 to December 2019 after approval from IERB. All patients with clinical history and examination finding of testicular torsion presented in Emergency Department or OPD were included in study. The age, duration of symptoms, degree of twists and type of surgical interventions were evaluated. Surgical procedure was performed with the patient in a supine position and under general anesthesia. The scrotum was explored via midline median raphe incision. After de-twisting, the testis was placed in warm sponges for 15 min - 20 min; if nonviable, it was removed. If

the testis was reperfused or fresh bleeding could be seen from the cut surface then it was placed in the scrotum and fixed in at least three sites with absorbable sutures. The contralateral testis fixation was performed in the same fashion as before. The Data was entered and analyzed by using SPSS version 22. Mean and standard deviation were calculated for duration of symptoms, degree of twists and median for age group.

## Results

A total of 19 patients were included in study that underwent surgery for testicular torsion, out of which in 16 patients left sided was involved. Age ranged from 12 days to 12 years with Median age was 10.5 years, median duration of symptoms was 60 hours (Min: 20 hours : Max 288 hours). In four patients torsion occurred in undescended testis. Total degree of twist varied from 1800-10800 (Mean  $647.30 \pm 94$ ). A total of 16 patients underwent orchidectomy (n=3 in undescended testis and n=13 in scrotal testis) as testis were black in appearance and necrotic (Table 1). No major complication was observed in any patient except one patient showed postoperative local inflammation. Histopathology revealed complete infarction. Testicular salvage was possible in only 3 patients. Non salvageable testes had mean duration of symptoms of  $75.6$  hour  $\pm 16.4$  hour age  $62.5$  months/ $-14$  months and degree of twists  $7480 \pm 60.1$  as shown in Table 1.

## Discussion

Acute scrotal pain and swelling in children is common reason for surgical consult in emergency department. Testicular torsion always required surgery when diagnosed clinically. The aim of early treatment is to avoid testicular infarction which results in orchidectomy. Some study recommend Exploration in all patients with acute scrotum [3,4]. Many authors have also explained reliability of Doppler ultrasound in the diagnosis of acute diseases of scrotum [5,6]. In our study all patients with clinical suspicious of Testicular torsion underwent exploration without waiting for Ultrasound Doppler.

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**Table 1:** Age, Duration of Symptoms, and Degree of Twists in patients.

n=19	Outcome variables			Total
	<1month (n=4)	1month to 1 year (n=5)	>1 year (n=10)	
Age				10.5 ± 6.2 years
Duration of symptoms( hours)	45.2 hours	84 hours	81.6 hours	70.2 ± 21
Degree of twists ( Mean)	7200	5400	6820	647.3° ± 94
Orchidopexy	1	2	0	3
Orchidectomy	3	3	10	16

The age is an important factor for diagnosis of testicular torsion, as it commonly presents in adolescent and newborns [7]. In our study, testicular torsion is more common in children more than 1 year, with infant group numbers slightly higher than neonates. All patients presented with testicular pain and swelling most common symptoms.

Colour Doppler Ultrasound has become a popular technique in most institution because it determine blood flow to testes, less time consuming, more readily available and does not expose patient to radiations [8]. But in our study none of the patient underwent Ultrasound due to limited resources available and all underwent exploration on the basis of clinical diagnosis. Gatti and Murphy [9] reported the relationship between testicular torsion and duration. They found that 90% to 100% of testes were retained if surgery implemented within 6 hours of testicular pain and 20% to 50% of testes salvaged if treatment was given within 6-12 hours of symptoms. In our study median duration of symptom is 60 hours. Non salvageable testes had mean duration of symptoms of 75.6 hours ± 16.4 hours.

Rattansingh et al. [10] proposed that the degree of testicular torsion was related to the angle of twist and duration of torsion, with testicular necrosis occurring at 3 to 4 days for testicular twist of 180 degree at 12 to 24 hours for testicular torsion of 360, and at 2 hours for testicular torsion of 720. In our study patients with non salvageable testes have degree of twists 7480 ± 60.1, which is also not related to testicular salvagability of 3 patients having mean degree of twist 720 degrees.

This study have some limitations, First, this was retrospective study, second follow-up duration not mentioned, and third sample size is small because only 1 year samples are included so no statistical test can be applied, therefore further studies with large sample size are required.

## Conclusion

Patient's age, duration of symptoms & degree of twists in context of torsion of testes were not found related to testicle ischemia. However, a data with large number of patients is required to find out the statistical significance of these variables.

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