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Research Article

**PREVALENCE OF TESTICULAR TORSION IN ADOLESCENT BOYS**<sup>1</sup>Muhammad Khaqan Khalid, <sup>2</sup>Babar Shahzad, <sup>3</sup>Zain Shahid<sup>1</sup>Medical Officer, General hospital, Samanabad, Faisalabad, Email: [mkhaqan717@gmail.com](mailto:mkhaqan717@gmail.com),<sup>2</sup>Medical Officer, Mayo Hospital, Lahore, Email: [babarchohan6@gmail.com](mailto:babarchohan6@gmail.com), <sup>3</sup>Department of Pediatrics, General Hospital, Faisalabad, Email: [rajabilal1984@gmail.com](mailto:rajabilal1984@gmail.com)**Article Received:** November 2020 **Accepted:** December 2020 **Published:** January 2021**Abstract:**

*Twisting of spermatic cord contents resulting in absence of blood supply to the ipsilateral testis. It is a urological emergency and requires prompt diagnosis and treatment to preserve the affected testis and future fertility. In this cross sectional study at DHQ and General Hospital, Faisalabad, mean age of children was  $8.64 \pm 4.08$  years. Thus, grey scale and color Doppler ultrasonography is the imaging modality of choice in diagnosing the testicular torsion and hence by the virtue of prompt ultrasound diagnosis, testicular loss and infertility can be avoided in the majority of cases.*

**Key words:** Testicular torsion, bell clapper deformity, ultrasonography, adolescent boys.

**Corresponding author:****Muhammad Khaqan Khalid,**

Medical Officer, General hospital, Samanabad, Faisalabad,

Email: [mkhaqan717@gmail.com](mailto:mkhaqan717@gmail.com).

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**INTRODUCTION:**

Testicular torsion is a urological emergency. It can occur in any age but most commonly seen in adolescent boys. [3] Its annual incidence is 1 in 4000 males younger than 25 years of age. [1] Clinically, patients typically present with acute onset pain often associated with nausea and vomiting. On physical examination, there will be absent cremasteric reflex in addition to high lying or horizontally oriented testis. [4] Moreover, positive Prehn sign is also an important clinical tool to diagnose torsion in which pain is increased on lifting the affected hemiscrotum. [5]

Early diagnosis is of paramount importance in preventing the testicular infarction which can cause serious functional impairment of infertility. Initially, venous obstruction occurs leading to engorgement, arterial occlusion and irreversible testicular infarction, usually within 6 hours of onset. [4] When testicular torsion develops, salvage rate of approximately 100% is observed within first 6 hours, 70% between 6 and 12 hours, and 20% between 12 and 24 hours. Salvage rates after 24 hours are less than 10%. [6]

In the suspected case of testicular torsion clinically, ultrasound has gained definitive role in early diagnosis as clinical assessment alone has false positive rate of upto 50% resulting in significant proportion of unnecessary surgical exploration. [7] Ultrasound is very useful and readily available imaging modality for prompt diagnosis and treatment of testicular torsion.

Testicular torsion is quite commonly presented in our surgical emergency and has always been a key differential in acute scrotal pain, particularly in adolescent boys. So, by sharing our experience and statistical data, we can diagnose torsion timely.

**RESULTS:**

In this cross-sectional study at DHQ and General Hospital, Faisalabad, mean age of children was  $8.64 \pm 4.08$  years. Children with testicular swelling were enrolled and testicular torsion was rolled out.

On ultrasound, there were 50 (38.5%) positive while 80 (61.5%) negative for testicular torsion. So the overall prevalence of testicular torsion among the patients of testicular swelling was 38%.

**DISCUSSION:**

Among the patients in emergency for acute swelling 17% of scrotal emergencies were having torsion, with an incidence of 1:4000. [9] Extravaginal torsion is

rare and seen commonly in neonates as tunica vaginalis is immature and not completely fused resulting in the abnormal rotation of both spermatic cord and testes. It is detected mostly when testicular infarction has occurred. [9] Ultrasound findings of extravaginal torsion are variable but most commonly septated hydrocele and calcification of tunica albuginea are seen. [10]

Intravaginal torsion is associated with morphological abnormality of tunica vaginalis known as bell-clapper deformity. In this deformity, tunica vaginalis is attached ectopically to the spermatic cord rather than attaching to posterolateral aspect of testes causing the distal intravaginal portion of spermatic cord to twist and developing subsequent torsion. This deformity is mostly present bilaterally and a study showing the ipsilateral bell clapper deformity in all cases of intravaginal torsion and with a contralateral bell clapper deformity in 78% of cases. [11] The degree of testicular ischemia depends on two important factors. These are degree of twist which ranges from  $180^\circ$  to  $720^\circ$  and the time interval of ischemia. [10]

Ultrasonography is the primary imaging modality for the diagnosis of testicular torsion. Both grey scale and color Doppler sonography show several important findings reflecting towards testicular torsion. However the degree of twist and duration of testicular ischemia are two factors that strongly influence the ultrasound appearance in testicular torsion. Initially, on grey scale testes may appear normal in echogenicity and gradually progressing to hypoechoic or heterogeneous texture suggesting ischemia. So the testicular texture on grey scale sonography is the best reported predictor of viability. [6]

There are also variations in color Doppler USG depending on the degree of torsion. The spectral waveform analysis is also an important tool to look for testicular blood flow as normally testes have low resistance high flow waveform. In torsion generally we see variable waveforms in the form of absent diastolic notch with monophasic pattern, decreased or reversed diastole flow and completely absent arterial flow. [12] Evaluation of spermatic cord while doing scrotal USG should be done to look for reliable torsion sign "whirlpool sign" which is defined as sudden spiral twist in the course of spermatic at the external inguinal ring or at scrotum and is seen as heterogeneous rounded or curled extra testicular structure with or without blood flow and is wrapped by epididymal head. [11] The empirical results reported in this study should be considered in the light of some limitations.

**CONCLUSION:**

Testicular torsion can be one third of the patients with scrotal swelling or emergencies related to scrotal problem. It should always be ruled out in patients coming to the surgical emergency with scrotal pain or swelling or both.

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