

Acute Scrotal Pain: A Two Year Prospective Cohort Study

Acute Scrotal Pain and its Treatment.

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ABSTRACT

Objective: To determine the cause of acute scrotal pain and its subsequent treatment.

Study Design: Prospective cohort study

Place and Duration of Study: This was carried out in Armed Forces Institute of Urology Rawalpindi and Combined Military Hospital Abbotabad from 1st Jan 2014 to 31st Dec 2015

Materials and Methods: A total of 116 patients who presented with acute scrotal pain were included in the study. Those presenting within six hrs and a history consistent with testicular torsion underwent urgent exploration. Those presenting with a history of more than six hours or within six hrs but clinically suggestive of testicular torsion underwent emergency Doppler ultrasonography before surgery.

Results: The occurrence of different conditions were as follows: testicular torsion 10, torsion of appendix testis 02, Epididymo-orchitis 4, orchitis 10, trauma 12, infected hydrocele 12, strangulated inguinal hernia 3, and idiopathic scrotal pain 18. Mean age(in years) for testicular torsion was 13±5 for Torsion of appendix testis 16±8, and for epididymo-orchitis 50±22. Mean duration of symptoms(in hours) for testicular torsion was 10±4, torsion of appendix testis was 11±3 and epididymo-orchitis 18±14. During surgery for testicular torsion, detorsion of the affected testis was done and bilateral orchidopexy was performed in 04 patients. Orchiectomy with orchidopexy of the contralateral side was done in 06 patients who had nonviable testis.

Conclusion: Acute scrotal pain is a common presentation. Our study concluded that in such cases colour doppler ultrasonography is important to reach a definitive diagnosis. The occurrence of testicular torsion is very high in patients less than 18 years of age. Moreover if there is a clinically strong suspicion of testicular torsion then yield of immediate surgery is high, because delay in exploration proves detrimental to the efforts of salvaging the testis. Patients with epididymo-orchitis respond well to ciprofloxacin prescribed for two weeks.

Key Words: Acute scrotal pain, testicular torsion, epididymo-orchitis

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INTRODUCTION

Acute scrotal pain is a common urological symptom presenting in the Emergency Room, which a general practitioner, general surgeon and a urologist has to deal with. It is important that the diagnosis or the cause of scrotal pain should be established early because a misdiagnosis or delayed diagnosis can lead to irreversible damage to the testis¹. The time of onset, age group, clinical presentation and ultrasonographic findings are important factors which help in determining the cause of acute scrotal pain. Testicular torsion is an important differential diagnosis of acute scrotal pain. A prompt diagnosis of this condition is important to salvage the testis². This two year study looks at the pattern of presentation of acute scrotal pain with the underlying cause and their subsequent treatment.

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Operative definitions

Acute scrotal pain: Patients presenting with acute scrotal pain with not more than 48 hrs of duration

Testicular torsion: Ischemia of the testicle due to rotation along the longitudinal axis of the spermatic cord. Diagnosed on Doppler ultrasonography or peroperatively.^{1,2}

Epididymo-orchitis: An inflammation of the epididymis and/or testis diagnosed with clinical findings and Doppler ultrasonography.³

MATERIALS AND METHODS

The study was conducted in Combined Military Hospital Abbotabad and Armed Forces Institute of Urology Rawalpindi from Jan 2014 to Dec 2015. A total of 116 patients who presented with acute scrotal pain were included in the study

Exclusion criteria

1. History of pain duration more than 48 hours
2. History of inguinal repair within last one month
3. Pain lumbar region radiating to groin and scrotum

A thorough history of the patients who presented into the emergency reception (ER) with acute scrotal pain was taken. Those presenting within six hours and a

history consistent with testicular torsion underwent upfront exploration. Those presenting with a history of more than six hours or within six hrs but clinically not consistent with testicular torsion underwent emergency Doppler ultrasonography, followed by surgery where indicated. Sonography was done by a consultant radiologist. Surgical exploration was done by an experienced urologist.

RESULTS

Table No.1: Diagnosis in patients presenting with acute scrotal pain

Sr.	diagnosis	Occurrence	%age
1.	Testicular torsion	10	8.62%
2.	Torsion of appendix testis	02	1.72%
3.	Epididymo-orchitis	49	42.24
4.	orchitis	10	8.62%
5.	trauma	12	10.3%
6.	Infected hydrocele	12	10.3%
7.	Strangulated inguinal hernia	03	2.58%
8.	Idiopathic scrotal pain	18	15.5%

Table No.2: Causes of acute scrotal pain VS Age of patients (in years)

Sr No.	Diagnosis	Age in years
1.	Testicular torsion	13±5
2.	Torsion of appendix testis	16±8
3.	Epididymo-orchitis	50±22
4.	orchitis	23±13
5.	trauma	14±23
6.	Infected hydrocele	45±3
7.	Strangulated hernia	5±4
8.	Idiopathic scrotal pain	25±18

Table No.3: Duration of symptoms (in hours)

Sr no.	diagnosis	Duration of symptoms in hours
1.	Testicular torsion	10±4
2.	Torsion of appendicular testis	11±3
3.	Epididymo-orchitis	18±14
4.	orchitis	17±11
5.	trauma	9±6
6.	Infected hydrocele	27±15
7.	Strangulated hernia	5±4
8.	Idiopathic scrotal pain	22±13

The results showed that out of the total of 116 patients, 54 (46.55%) patients presented within 6 hours. 4 of these patients (7.4%) were diagnosed to have testicular torsion. 45 (38.79%) patients were less than 18 years old, and 10 (22.2%) were diagnosed to have testicular torsion. 26 (22.41%) patients presented within six hours and were less than 18 years old, too. Four

(15.38%) of these patients had testicular torsion. Cremasteric reflex was absent in 23 patients, 10 of which were diagnosed as testicular torsion while remainder were diagnosed as epididymo-orchitis. 16 patients underwent immediate surgical exploration on clinical suspicion of testicular torsion out of which 10 (62.65%) had testicular torsion. 02 (12.5%) had torsion of appendicular testis and 04 (25%) had no abnormal findings. During surgery, detorsion of the affected testis was done and bilateral orchidopexy was performed in 04 patients. Orchidectomy with orchidopexy of contralateral testis was done in 06 patients who had non-viable testis.

In our study all patients suspected of having epididymo-orchitis underwent scrotal ultrasonography. Out of 49 patients diagnosed with epididymo-orchitis, three had epididymal abscess along with fever which were drained and given intravenous ciprofloxacin 400mg twice daily till the fever had settled. Then they were given oral ciprofloxacin for 02 weeks as outpatients. Those with mild epididymo-orchitis were given oral ciprofloxacin 500mg twice daily for 02 weeks³. All of the patients had complete recovery.

DISCUSSION

Acute scrotal pain is a common urological symptom presenting in the emergency reception⁴. An early diagnosis of the condition is important as it can influence the outcome to a great extent.⁵

Age of the patient and the duration of symptoms are important clues which can help us in diagnosis. Eaton et al⁶ concluded that bell clapper deformity was a significant finding in testicular torsion⁵. Adolescent age is the most common age for testicular torsion. Mattias et al⁶ found that the peak age for testicular torsion is 11 to 14 years.

In our study, the mean duration of symptoms was 13 hrs. Post operatively 06 (60%) torsed testis were found to be non viable. This shows that the late presentation of these patients with testicular torsion gives little room for testicular salvage.

Mattias et al⁶, Gunther P, et al⁷ and other studies^{8,9} demonstrated that Doppler ultrasonography was highly sensitive in diagnosing testicular torsion. In our study 06 patients who presented with a duration more than 06 hrs were diagnosed on Doppler ultrasonography. In retrospect there was no missed diagnosis of testicular torsion. Clapper bell deformity was found in all patients presenting with testicular torsion during surgical exploration.

Only one patient (10%) eventually diagnosed with testicular torsion had a history of mild blunt trauma. Trauma is an infrequently reported precipitant of testicular torsion, with incidence of only 5 to 6%, mostly affecting teenagers^{10,11}.

Cremasteric reflex was absent in all patients subsequently diagnosed with testicular torsion, but it

was also present in 06 cases later diagnosed to have acute epididymo-orchitis. Cremasteric reflex is a sensitive but not specific sign for testicular torsion.^{12,13}

Clinically it is very difficult to differentiate between testicular torsion and torsion of appendix testis¹³. In our study 16 of the cases explored for suspicion of testicular torsion, 02 had torsion of appendix testis (12.5%). Similar results have been seen in other studies^{14,15}.

Epididymo-orchitis is an important differential diagnosis of acute scrotal pain. Ultrasonography is important for the diagnosis to rule out epididymal abscess^{16,17}. Doppler ultrasonography is very important in differentiating between testicular torsion and acute epididymorchitis.^{18,19,20,21}

10 patients presented with testicular trauma but no clinical sign of testicular torsion or testicular fracture was evident. Strangulated inguinal hernia and infected hydrocele were diagnosed clinically and treated accordingly.

CONCLUSION

Acute scrotal pain is a common presentation. Our study concluded that in such cases colour doppler ultrasonography is important to reach a definitive diagnosis. The occurrence of testicular torsion is very high in patients less than 18 years of age. Moreover if there is a clinically strong suspicion of testicular torsion then yield of immediate surgery is high, because delay in exploration proves detrimental to the efforts of salvaging the testis. Patients with epididymo-orchitis respond well to ciprofloxacin prescribed for two weeks.

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Ringdahl E, Teague Lynn. Testicular torsion. Am Family Physi 2006;74(10):1739-1743.
2. Sessions AE, Rabnowitz R, Hulbert WC, Goldstein MM, Mevorach RA. Testicular Torsion: Direction, Degree, Duration and Disinformation. J Urol 2003;169(2): 663–665.
3. Grabe M, Johanson–Bjerkland TE, Botto H, Cek M, Naber KG, Pickard RS, et al. EAU guidelines for the management of urinary and male genital tract infections. Urinary Tract Infection (UTI) Working Group of the Health Care Office (HCO) of the European Association of Urology (EAU). Eur Urol 2001;40(5):576-88.
4. Mahmood T, Farooq K, Asghar J, Anjum R. Evaluation of scrotal pathology on ultrasonography Pak J Med Health Sci 2011;5(2):341-3.
5. Eaton SH, Cendron MA, Estrada CR, Bauer SB, Borer JG, Cilento BG, et al. intermittent testicular

torsion: diagnostic features and management outcomes. J Urol.2005;174(4):1532–35.

6. Waldert M, Klatter T, Schmidbauer J, Remzi M, Lackner J, Marberger M. Color Doppler Sonography Reliably Identifies Testicular Torsion in Boys. Urol 2010;75(5):1170-74.
7. Gunther P, Schenk JP, Wunsch R, Holland-Cunz S, Kessler U, Troger J, et al. Acute testicular torsion in children: the role of sonography in the diagnostic workup. Eur Radiol 2006;16(11): 2527-32.
8. Gunther P, Rubben I. The Acute Scrotum in Childhood and Adolescence. Dtsch Arztebl Int 2012;109(25): 449–58.
9. Wright S, Hoffman P. Emergency ultrasound of acute scrotal pain. Eur J Emerg Med 2015;22(1): 2-9.
10. Seng YJ, Moissinac K. Trauma induced testicular torsion: a reminder for the unwary. J Accid Emerg Med. 2000; 17: 381-382.
11. Chingwundoh FI. The post-traumatic painful testis. Postgrad Med J 1996; 72: 251-252.
12. Nelson PC, Williams JF, Bloom DA. The cremasteric reflex: a useful but imperfect sign in testicular torsion. J Ped Surg 2003;38(8):1248-49.
13. Rabnowitz R. The importance of the cremasteric reflex in acute scrotal swelling in children. J Urol 1984;132:89-90.
14. Mashtaq I, Fung M, Glasson MJ. Retrospective review of paediatric patients with acute scrotum. ANZ J Surg 2003;73:55-8.
15. Lewis GA, Bukowski TP, Jarvis PD, Wacksman J, Sheldon CA. Evaluation of acute scrotum in the emergency dept. J Ped Surg 1995;30(2):277-282
16. Chan PT, Schlegel PN. Inflammatory conditions of the male excurrent ductal system. J Androl. 2002; 23(4):453-60.
17. Street JE, Wilson DJ. Acute epididymo-orchitis. Med 2014;42(6):338-340.
18. Watkin NA, Reiger NA, Moisey CU. Is the conservative management of the acute scrotum justified on clinical grounds? Br J Urol 1996; 78:623-7.
19. DaJusta DG, Granber CF, Villanueva C, Baker LA. Contemporary review of testicular torsion: New concepts, emerging technologies and potential therapeutics. J Ped Urol 2013;9(6):723-30.
20. Altinkilic B, Pilatz A, Wiedner W. Detection of Normal Intratesticular Perfusion Using Color Coded Duplex Sonography Obviates Need for Scrotal Exploration in Patients with Suspected Testicular Torsion. J Urol 2013;189(5):1853-58.
21. Morri A, Murthy PV, Kurra SS. Torsion Testis: role of color Doppler. A Study of 50 Cases. J Evidence based Medicine and Healthcare 2015;2(40):6635-38.