THE ACUTELY PAINFUL SCROTUM IN CHILDREN: REVIEW OF 29 CONSECUTIVE CASES

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ABSTRACT

Background: Acute scrotum refers to sign and symptoms associated with local inflammation. Testicular torsion, torsion of the testicular appendix and epididymo orchitis are common causes of acute scrotum. It is an emergency with 6 hour critical time for surgery. it is possible to diagnose testicular torsion with almost 100% accuracy on physical examination with the help of colour doppler ultrasonography.

Objectives: To determine the importance of testicular exploration in acute scrotum.

Methods: This cross sectional study was conducted at institute of kidney diseases Peshawar, Pakistan from July 2017 to June 2018. A sample of 29 patients was selected by convenience sampling. Detail history, examination, urinalysis and complete blood count and Colour doppler ultrasonography were performed in all patients. Age in years was a ratio data and analyzed for mean, SD, minimum and maximum.

Results: The age range was 1 year to 14 year. The mean age was 9.59±3.6. 18 patients (62.06%) presented, were in 8-14 years of age group followed by 11 patients (37.94%) in 1-8 years of age group. Time between onset of pain and arrival at the ED was 0 to 6 hours for 21 patients, 7 to 12 hours for 6 patients and more than 12 hour for 2 patients. Commonest presentation were, pain, swelling, redness and fever. Majority presented with left sided pathology. Per operatively 22, 5 and 2 were found to have testicular torsion, torsion of appendix and epididymo-orchitis respectively. Five patients underwent orchidectomy.

Conclusion: Acute scrotum needs immediate exploration for preservation of testes. Un necessary delay for investigation can lead to irreversible ischemia and testicular loss.

Key words: Acute scrotum, scrotal exploration, testicular torsion

INTRODUCTION

Acute scrotum refers to sign and symptoms associated with local inflammation of the scrotum that appear suddenly and usually are not associated with trauma. Such signs and symptoms include scrotal pain, swelling, redness and fever.[1] Testicular torsion(TT), torsion of the testicular appendix (TTA) and epididymo orchitis (EO) are three most common causes of acute scrotum. Testicular torsion is define as twisting of spermatic cord along longitudinal axis, with resultant ischemia due to compromised blood flow to the testical.[2]

It is a urological emergency with time critical for surgery, with most reports suggesting 6 hour as the cut off for testicular viability[3]. Currently it is possible to diagnose TT with almost 100% accuracy, on physical examination with the help of colour doppler ultrasonography(CDUS).[4,5] Manual detorsion as described by Nash,[6] has been suggested before surgery to return blood flow faster. Upon exploration one third of testis are ischemic and orchidectomy is performed.[7]

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MATERIAL AND METHODS

This cross sectional study was conducted at the department of Urology and renal transplantation, institute of kidney diseases Hayat Abad medical complex Peshawar, Pakistan from July 2017 to June 2018. With convenience sampling, 29 patients were included.

All patients were subjected to detail history and physical examination followed by urinalysis and complete blood count. The physical findings included scrotal erythema, swelling and tender scrotum. Colour doppler ultrasonography (CDUS) was performed in all patients. Intravenous prophylactic antibiotic were administered. In the presence of suspicious clinical findings, surgical exploration was mainly based on these clinical findings rather than CDUS results. Either orchidectomy or orchidopexy was done for testicular torsion, at the same time contralateral testis was fixed. Excision was done for torsion of appendix. Age in years was a ratio data and analyzed for mean, SD, minimum and maximum. The rest were categorical data and analyzed as number and percentage by using SPSS version 18.

RESULTS

During 1 year study period 29 patients with acutely painful scrotum were admitted to our hospital. The mean age was 9.59years±3.6SD. The age range was 1 year to 14 year. 18 (62.06%) patients presented were in 8-14 years of age group followed by 11 patients (37.94%) in 1-8 years of age group. Time between onset of pain and arrival at the ED was 0 to 6 hours for 21 patients, 7 to 12 hours for 6 patients and more than 12 hour for 2 patients.

Commonest presentation were, pain in 26 patients, swelling in 23 patients, redness in 6 patients and fever in 9 patients. Among total 17 patients presented with left sided pathology and 12 with right sided. Surgical exploration was performed in all patients. Per operatively 22, 5 and 2 were found to have testicular torsion, torsion of appendix and epididymo-orchitis respectively. Out of 22 testicular torsion patients, testis were salvaged in 17 and removed in 5 patients.

DISCUSSION

Testicular torsion, torsion of the testicular appendix and epididymo orchitis are three most common causes of acute scrotum[8]. In our study the prevalence of TT, TTA and EO were found to be 75.6%, 17.2% and 6.8% respectively which were consistent to the findings of Mustafa Gunes et all which were 74.2%, 13.4% and 8.2% respectively[9]. On the other hand in the study of Waldert M et al[10], and Iyronis ID[11], the most common presentation were TTA and EO respectively.

It is important to distinguish these three because of their different management. While MRI and nuclear scintigraphy have high detection rate[12] they are costly, not universally available and can delay the optimal timing of surgery. On the other hand CDUS has easy availability, short duration, low cost and has its excellent imaging of anatomical details and perfusion[13]. Current studies in this topic favor history, physical examination and CDUS studies for diagnosis[14].

Clinical findings such as pain duration <24 h, nausea/vomiting, high riding testis and abnormal cremesteric reflux were found to be predictive of TT.[15] Over 20 years, CDUS has been used to diagnose TT. It reduces the unnecessary surgical exploration of the scrotum. In our study ultrasound specificity was 70% which was comparable to the study of Huamao Ye et al which was 71.4%[16].

The success rate of preserving the testicle in TT mainly depends on early presentation to the hospital. Testicular infarction start after second hour of ischemia, complete necrosis occurs in 6 hours and irreversible loss of the testis occur in 24 hours. In our study total testicular salvage rate in TT was 77.22%, which was comparable to the study of Cost NG et al (75.7%)[17]. In contrast, Zhao et al[18] who reported 58.1 % testicular salvage rate in patient < 18 year of age which was much lower than our study.

A firm, tender nodule can be seen as blue dot through the skin of scrotum, is pathognomic of the twisted appendage. Surgery for TTA is needed to rule out testicular torsion and to relieve the pain, which can last a week if it is managed non operatively[19]. In our study we managed all cases of TTA surgically.

Acute epididymitis in boys is rare except when the patient has anatomic abnormalities that predispose to genitourinary tract to infection. Only 2 of our patients were found to have such abnormalities which were consistent with the findings of Peter A.M et al [20]. There were two boys in our study with epididymo-orchitis, all of whom underwent surgical exploration.

Unfortunately, clinical findings overlap considerably between three most common causes of acute scrotum. We did not use radionuclide scan to differentiate testicular torsion from epididymo-orchitis. When this technique is readily available it can eliminate the need for surgical exploration in epididymo-orchitis.

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