Journal of Pediatric Urology (2013) 9, 1161—1165

Journal of Pediatric urology

Do not forget to include testicular torsion in differential diagnosis of lower acute abdominal pain in young males

Zenon Pogorelić [a,*], Ivana Mrklić [b], Ivo Jurić [a]

[a] *Department of Pediatric Surgery, Split University Hospital Centre and Split University School of Medicine, Spinčićeva 1, 21 000 Split, Croatia*
[b] *Department of Pathology, Forensic Medicine and Cytology, Split University Hospital Centre and Split University School of Medicine, Spinčićeva 1, 21 000 Split, Croatia*

Received 3 September 2012; accepted 23 April 2013
Available online 3 June 2013

KEYWORDS
Testicular torsion;
Children;
Abdominal pain;
Acute scrotum;
Spermatic cord torsion

Abstract *Background:* Management and outcomes of pediatric patients with testicular torsion initially presenting as acute abdominal pain were evaluated.
Patients and methods: The case records of 84 children operated on for testicular torsion from January 1999 through May 2012 were retrospectively reviewed. Of the total number of operated patients, 9 presented with abdominal pain but without initial scrotal pain, and only they were included in the study. The diagnosis of testicular torsion was made clinically and confirmed by Doppler ultrasound and scrotal exploration.
Results: The most common presenting symptoms were abdominal pain and vomiting. The patient's scrotum and testicles were not examined during the first evaluation in 6 cases, while in 3 cases the testicles were examined during the first physical examination. At surgery, 4 testes were salvaged, while 5 have been lost because of testicular necrosis. The mean duration of symptoms was 4 h in the group of salvaged testes and 39 h in the orchidectomy group. There were no major complications.
Conclusion: Testicular torsion should always be included in differential diagnosis when evaluating lower abdominal pain in young males. The external genital organs should be examined in every child or adolescent with acute abdominal pain.

* Corresponding author. Tel.: +385 21556182; fax: +385 21556660.
E-mail address: zenon@vip.hr (Z. Pogorelić).

1477-5131/$36
http://dx.doi.org/10.1016/j.jpurol.2013.04.018

Introduction

Testicular torsion is a true urologic emergency and must be differentiated from other complaints of testicular pain because a delay in diagnosis and management can lead to loss of the testicle [1—5]. Annual incidence of testicular torsion is 4.5 in 100,000 males 1—25 years of age [1]. It can occur at any age but usually occurs in young males, with a bimodal incidence in the pediatric population: during the first year of life, and between the ages of 13 and 16 years [2]. Testicular torsion occurs when the testis twists in the scrotum, cutting off its blood supply. This is an extremely painful condition and is the most common cause of a testicle loss [3—5]. As many as 50% of boys with testicular torsion have had a prior episode of testicular pain [6]. The left testis is more frequently involved. Bilateral cases account for 2% of all torsions [3]. It is a commonly held belief that a testicle torsed for longer than 6 h is outside the timeframe for survival [5]. If treated within 6 h of the presenting pain, there is a good chance of saving the affected testicle, as 90—100% testicles will be saved. If treated within 6—12 h 20—50% testicles will be saved and if treated within 12—24 h 0—10% testicles will be saved [1—3,5]. There are many conditions that can mimic testicular torsion. The differential diagnosis of an acute scrotum includes spermatic cord torsion, torsion of testicular appendage, acute epididymitis, trauma, incarcerated hernia, hydrocele, testicular tumors, and idiopathic and scrotal edema [1—4,7]. On examination, the patient with testicular torsion usually has a swollen tender testicle that is raised in a red scrotum and the testicle may be lying horizontally in the scrotum. Loss of the cremasteric reflex on the affected side and no pain relief when the testicle is elevated may also be noticed, and the patient may have a fever [1,4,5]. Not all testicular torsion cases present as acute onset severe scrotal pain. Some patients initially present only with lower abdominal or inguinal pain, and the pain moves to the scrotum a few hours later after the initial abdominal presentation. If this condition remains unrecognized, within the golden timeframe of 6 h after initial pain, the testicle may be lost. This is the reason why any male patient presenting with lower abdominal pain should have their testicles checked to make sure that they do not have torsion.

Since there are very few data on this topic in the current literature and these are mostly limited to case reports, the purpose of this study was to evaluate the management and outcomes of pediatric patients with testicular torsion initially presenting as acute abdominal pain.

Patients and methods

The case records of 84 children operated on for testicular torsion in the Department of Pediatric Surgery, Split University Hospital Centre, from January 1999 through May 2012, were retrospectively reviewed. The medical records included initial medical history, physical examination, emergency ultrasound, operative findings, and the results of follow-up. The outcomes of all 84 patients were determined and those patients who presented only with abdominal pain were selected for further review. Out of total number of operated patients, 9 patients presented with abdominal pain only, without initial scrotal pain.

A limitation of this study is possible information bias. Abdominal pain may have been present in more patients, but either that history was not elicited or not recorded. The results of our study were obtained from patient medical case records. Although the case records were written in detail, there is a possibility that there were more patients presenting with isolated abdominal pain.

The diagnosis of testicular torsion was made clinically and confirmed by a Doppler ultrasound and scrotal exploration. As Doppler ultrasound was used for diagnosis only during the last few years, the findings by this diagnostic method are not presented. Surgical exploration was performed on an emergency basis after analgesia administration and anesthesia preparation. An exploration of the involved hemiscrotum was performed through a horizontal incision. In all cases immediate detorsion of the testis was performed. If the testis remained vital after manual detorsion, fixation of the testis was performed. If the testis remained dark it was wrapped with warm saline-soaked towels for at least for 5 min. Subsequently, if no recovery in the color of the testicle was seen, the testicular capsule was incised. When no bright bleeding was detected, an orchidectomy was performed. All excised testicles were examined by a pathologist and diagnosis of testicular necrosis was confirmed. After a few weeks, application of a silicone prosthesis was performed in most of the patients.

The patients were followed up at 14 days, 3 and 12 months postoperatively, and then examined once a year.

Results

In the selected study period a total number of 84 patients were operated on for testicular torsion. Mean age at the time of the surgery was 12.5 years (range 3 days—17 years). There was no significant difference in age between boys who presented only with abdominal pain and those who presented with testicular pain. Two peak incidences of testicular torsion were found: one during the first year of life, the other between 13 and 15 years of age. Mean duration of symptoms in the group of salvaged testes, at time of surgery, was 6 h (range 1—20), and in the group of orchidectomies it was 48.5 h (range 16—120 h). The left testis was affected in 48 cases (57%), while the right was affected in 36 cases (43%). Pain, absent cremasteric reflex and edema of hemiscrotum were the most common findings on physical examination (Table 1). Eight patients presented with inguinal canal testicular torsion [10]. In 29 patients (35%) an orchidectomy was performed because of testicular gangrene and 55 testes (65%) were salvaged. A Doppler ultrasound scan of the scrotum was performed immediately in most of the patients and in most cases showed an enlarged, avascular, affected testicle.

During the study period, of the total number of children operated for testicular torsion 17 patients (20%) presented with abdominal pain and nine of them (10.7%) presented with abdominal pain only, without initial scrotal pain. Only these nine patients were included in the study. Patient's characteristics and operative findings are presented in