

14 Years' Experience In Delayed Acute Scrotum From A Maternal And Child Hospital

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SUMMARY

Objective: The aim of this study is to evaluate the 14 years' clinical experience in children with acute scrotum and to discuss the role of surgery for acute scrotum in delayed presentation.

Methods: Of 156 boys with acute scrotum, 98 (63%) were operated for suspected torsion between 1987 and 2001. Clinical records are evaluated retrospectively regard to surgical indications, findings of operation and outcome.

Results: Testicular torsion (n=38, 39%), appendix testis/epididymis torsion (n=21, 22%), epididymo-orchitis (n=20, 20%), acute/infected hydrocele (n=12, 12%), and hematocele (n=7, 7%) were diagnosed in 98 children. The mean admission time was found 4.5 days (1-10 days) in testicular torsion group while mean age was biphasic (15 days and 7 years). Only two testes from 38 patients with unilateral testicular torsion saved from being lost to torsion. These two patients had admitted with one and two-day history.

Conclusion: Physical examination in cases with acute scrotum is reliable for deciding to operate immediately, when diagnostic facilities are not available during 24 hours in the institution. We suggest that surgical exploration is necessary even in cases of testicular torsion with delayed admission.

Key words: Acute scrotum, pediatric surgery, testicular torsion

ÖZET

Geç Başvurulu Akut Skrotumlu Olgularda 14 Yıllık Deneyim

Amaç: Bu çalışmanın amacı 14 yıllık sürede akut skrotumla başvuran çocuklardaki klinik deneyimlerimizi değerlendirmek ve geç başvuran akut skrotumlu olgularda testis sağaltımı üzerine cerrahi tedavinin rolünü araştırmaktır.

Gereç ve Yöntem: 1987-2001 yılları arasında akut skrotum nedeniyle başvuran 156 çocuğun üm kayıtları analiz edildi. 98'i akut skrotum nedeyle opere edildi (%63). Cerrahi endikasyon, ameliyat bulguları ve sonuçlar açısından hastaların tüm klinik kayıtları retrospektif olarak incelendi.

Bulgular: Başvuran 156 çocuğun 98'i (%63) opera edildi. 98 çocukta; testis torsiyonu (n=38, %39), appendiks testis veya epididimis torsiyonu (n=21, %22), epididimoorşit (n=20, %20), akut infekte hidrosel (n=7, %7) saptandı. Testis torsiyonlu olgularda ortalama başvuru zamanı 4.5 gün (1-10 gün) bulundu, ortalama yaş değerleri bifazikti (15 gün ve 7 yaş). 38 testis torsiyonlu olgudan sadece testis kaybı önlendi. Bu olgular bir ve iki günlük öykü ile başvurmuşlardı.

Sonuç: 24 saat boyunca klinikte radyolojik imkanlar mümkün olmasa da akut skrotum olgularında fizik muayene bulguları ameliyat kararı için geçerlidir. Hastalar geç başvursalar dahi cerrahi eksplorasyonu önermekteyiz.

Anahtar Kelimeler: Akut skrotun, çocuk cerrahisi, testis torsiyonu

INTRODUCTION

The most common etiologies of acute scrotal swellings in the pediatric patients are epididymitis, torsion of testis, and torsion of appendix testis. The torsion of the testis compromises gonadal blood flow, and may lead to ischemia and parenchymal necrosis(1).

Acute scrotum requires prompt diagnosis and treatment, and foremost in the physician's mind is that this swelling has caused by torsion of the testis or of the spermatic cord. History and physical examination are important in detection of the former causes.

Differential diagnosis can be difficult (2). The preservation of testis after the torsion directly related to the duration and degree of torsion. Current policy was to explore every case of acute scrotum and to remove only the necrotic testis, because of the possibility of testicular salvage even after prolonged period of torsion (2,3). The aim of this study is to evaluate the 14 years' clinical experience in children with acute scrotum and to determine the reliability of surgical exploration, when emergency diagnostic facilities are not available.

PATIENTS AND METHOD

We reviewed the charts of all patients with acute scrotum retrospectively. All patients evaluated and operated by pediatric surgeons. Findings of physical examination, blood tests and urinalysis have investigated. Color Doppler ultrasonography and nuclear scan had done only in very limited cases, due to lack of 24-hour availability of these diagnostic facilities in our hospital. In additions, operational findings and late outcome were reviewed.

RESULTS

Between 1987 and 2001 years, 156 boys aged less than 15 years admitted for acute scrotal disorders to The Bakırköy SSK Maternal and Child Hospital. Emergency surgical explorations have done in 98 children on for "suspected testicular torsion"; inguinal exploration performed with simultaneous scrotal fixation of the contralateral testis. Patients with idiopathic scrotal edemas (n: 47) and mumps orchitis (n: 11) were treated medically and these patients were excluded from the study. 98 patients underwent exploration for suspected testicular torsion. 38 patients had testicular torsion. The testicular loss rate was 95% in testicular torsion group, 35% in suspected testis torsion group. The etiologies of acute scrotum in operated patients summarized in **Table 1**.

Table I. Etiology of acute scrotum

Diagnosis	N	Right	Left	Admission Time/day	Mean Age/year
Torsion of Testis	38	16	22	4.5 day (1-10 day)	1.5 year (3 day-13 year)
Torsion of appendix testis/epididym	21	12	9	3.5 day (1-5 day)	7.5 year (1.5 year-12 year)
Orchi-epididymitis	20	11	9	4.5 day (1-10 day)	4 year (20 day-6 year)
Acute infected hydrocele	12	9	3	5 day (2-7 day)	3.5 year (12 day-7.5 year)
Hematocele	7	4	3	7.5 day (2-10 day)	2.5 (10 day-10 year)

The age distribution of patients with testis torsion was biphasic. The peak incidence was 15 days (16 patients, 42%) and 7 years (9 patients, 24%). Seven patients (18%) were admitted with the history of scrotal mass since delivery, mean age was between 3-10 days. Mean admission time was found 4.5 days (1-10 days). Testicular torsion was on the left in 22 and on the right side in 16

patients. Surgical explorations have done in 38 children and in only 2 patients, who had one and two day's histories, testes were salvaged (5%). These two testes have found normal at late control.

Torsion of appendix testis was found in 18 and torsion of appendix epididymis was found in 3 patients. In one patient, a history of communicating hydrocele was determined at same side. Mean age was 10 years (15 patients, 71%) and 3 years (6 patients, 29%). Mean admission time was found 3.5 days (15 days). 9 patients involved the left and 11 the right side. Epididymitis were determined in 20 cases. Two patients had associated with anus imperforatus and one patient had hypospadias. Mean age was 4 years (40 days and 6 years). 9 patients involved the left and 11 the right side. In postoperative period, ultrasonographic examinations of the genitourinary system showed normal findings. In surgical exploration, 3 patients needed drainage because of infected hydroceles. In seven cases, liquid samples cultures were found sterile. All testes were normal at the late control.

Acute infected hydrocele was determined in 12 patients. There were history of trauma in two patients. One of them also had infected inguinal lymph adenopathy. 3 involved on the left and 9 on the right side. Haematoceles were determined in seven patients. One of them had born delivery traumatically and five had history of trauma. 3 patients had left side, 7 had right sided haematoceles. There were no active hemorrhage and orchiepididymitis at surgical exploration. All testes were normal at follow-up examination.

DISCUSSION

Although usually not life-threatening; scrotal pain, swelling or a mass in a child should be considered as a potential surgical emergency until the etiology is determined. Although most etiologies of acute scrotal swellings accepted as a medical problem, testicular torsion may result in rapid loss of the testis if not diagnose early and managed in a timely manner. It is a true surgical emergency for testicular salvage (3). Many algorithms exist for the diagnosis and

management of children with an acute scrotum (3,4,5). Absence of the cremasteric reflex should increase the suspicion for the testicular torsion (6,7), but misdiagnosis was underlined in the case of orchitis by an uncertain cremasteric reflex (7). In our series, because of delayed admission, cremasteric reflex could not be assessed in most of the cases.

Color Doppler ultrasound and Doppler stethoscope are useful adjuncts in the evaluation of the acute scrotum when physical findings are equivocal (7,8). Nuclear scanning of testis appeared to be more reliable and it has been reported that its accuracy in the diagnosis of testis torsion is 100% (7). But, decreased perfusion in the edematous testicles with epididymitis and orchitis could be mimicked torsion in these studies. In addition, these techniques are not available 24 hours in most of the institutions.

Physical examination findings and patient's age are important for decision of the testicular torsion. Some reports have indicated that torsion is most common at puberty, with another smaller peak incidence during the first year of life especially first months (7). The age distribution of patients with testicular torsion is biphasic in this study. Besides the age distributions of children other than testicular torsion showed a single peak incidence (9). Our series showed a preponderance of torsions of the left testis, which correspond to the literature (9). Surgical exploration to exclude testicular torsion suggested in all prepubertal males presenting with a tender testicle (5). Some authors suggested that the patients should be taken directly to surgery if the diagnosis of testicular torsion is obvious or even reasonably likely (10).

In our institution, among the 98 patients who had emergency surgical exploration because of acute scrotum, testicular loss resulted only after torsion of the testis. 36 testes which had necrotic were removed. Some author's conclusion that a 6-hour period of ischemia determined loss of the testis is still valid today (11). Testicular torsion leading to gonadal loss has a direct relationship between duration of torsion and subsequent atrophy exists, and salvage rates range from 20 to 75% (12,13,14). Thus, the importance of making a rapid and correct diagnosis

remains essential. In addition, every pediatric surgeon and pediatric urologist will certainly acknowledge that there are occasions when surgical exploration should not be delayed, if testicular loss is averted. Patients suffering from intermittent torsion and detorsion were not subjected to constant ischemia and viability of testis was maintained (13,14). Prenatal or intra uterine torsion noted at birth is not a surgical emergency. Exploration through an inguinal approach should be electively during the first few days of life to confirm the diagnosis, and remove the non-viable testis and fix the other normal testis (15). In our study, two neonatal testicular torsions recovered, although these patients had delayed admission. In cases with acute scrotum, testicular loss is mainly a consequence of initial misdiagnosis and delayed referral. Every patient suspected of having torsion of the testis should have it explored in an emergency basis and fixed even if it appears to have resolved (3,16).

In conclusion: Physical examination alone seems to be reliable for deciding to operate immediately in cases with delayed acute scrotum, when diagnostic facilities are not available or not available for 24 hours in the institution. However, a delay in salvaging testicular torsion would end with loss of testis. Surgical exploration is recommended even in patients with delayed admission, as salvaging of some testis is still possible.

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