

SONOGRAPHIC IMAGING OF ACUTE SCROTAL PAIN

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Abstract

Background: An acute scrotum is defined as acute pain with or without scrotal swelling, may be accompanied by local signs or general symptoms. Acute scrotal pain is a medical emergency. Depending on cause, the management is entirely different. Torsion of testis and strangulated hernia are surgical emergency; whereas, epididymo-orchitis is treated by medicines. Testicular trauma and obstructed hernia can be differentiated by taking history from patient. **Clinical /Physical examination adds only a little information.** Color Doppler ultrasound is the modality of choice to differentiate testicular torsion from inflammatory conditions.

Aim of Study: The aim of this study is to observe the epidemiology of acute scrotum and their presentation, there by facilitating a systematic approach in identifying those patients who need early intervention to decrease associated morbidity and mortality.

Conclusion: Acute scrotum is a common case seen in the today's scenario with considerable mortality and morbidity. In our study acute epididymo-orchitis was the commonest cause followed by torsion of testis the primary objective of management of acute scrotum is to avoid testicular loss. Acute scrotal swellings are common in younger & middle age individuals with variable symptoms. These cases need careful examination, proper evaluation and prompt treatment. The likelihood of testicular salvage in torsion depends on the interval between onset of pain and surgical intervention. **Routine clinical examination gives only a little information.** Doppler ultrasound assessment of patients at intermediate clinical risk of testicular torsion significantly reduced the frequency of negative surgical explorations without increased rate of missed testicular torsions. (1) In the imaging algorithm for testicular torsion in childhood, we differentiate between the two main entities, the peri- and neonatal torsion and torsions in children and infants older than 1 month. Imaging should not cause any delay in diagnosis but contribute to increase the specificity of diagnosis of testicular torsion in order to avoid unnecessary surgical explorations. (2)

Keywords: Sonographic Imaging in Acute Scrotal Pain.

Introduction

The ability to confidently establish a surgical versus a nonsurgical diagnosis for acute scrotal pain is important. The benefits of early surgery for testicular salvage in ischemic disease, primarily torsion of the testis, are well-known; but must be balanced against the costs of operating unnecessarily on a large number of patients with nonsurgical disease, primarily acute epididymo-orchitis. Acute scrotum is defined as acute pain with or without scrotal swelling, may be accompanied by local signs or general symptoms. The most common differential diagnoses of the acute scrotum include: i) Epididymo-orchitis ii) Torsion of testis iii) Torsion of appendix testis iv) Fournier's gangrene v) Hematocele vi) Pyocele vii) Scrotal wall abscess.[3] This appropriate discussion, however, will be limited to patients with acute pain who have no history of trauma and no history of a mass before the onset of pain. There is, however, overlap in the clinical presentation of the different causes of acute scrotal pain. Imaging in clinically equivocal cases may lead to an early diagnosis of testicular torsion, and thus, decrease the number of unnecessary surgeries. There is no definite

protocol of acute scrotum screening for the primary care physicians to follow. Early detection of testicular torsion through color Doppler is the only means to reduce the burden of morbidity. The article emphasizes the importance and protocol of screening of patient with acute scrotal pain to create awareness among primary healthcare providers so as to detect testicular torsion at the earliest, so immediate surgery can be performed to salvage the testis as well as to rule out testicular torsion so that unnecessary surgery can be avoided. A study comparing primary scrotal exploration and initial ultrasound (US) examination with exploration for positive US results or a high clinical suspicion of torsion, showed that US obviated the need for exploration in many patients and thus shortened hospital stays [4].

This clinical syndrome most often presents with acute onset of pain and swelling. Acute scrotum can also be caused by either sexually transmitted pathogens ascending from the urethra or non-sexually transmitted uropathogens spreading from the urinary tract TB can cause focal epididymitis, draining sinus, or classical beading of the vas

deferens with extensive involvement (5). Intermittent testicular torsion is a condition in which patient presents with classical history of torsion but clinical examination and USG scrotum are normal (6) Perinatal testicular

torsion, defined as torsion occurring in the prenatal period or in the first month after birth, Most are extravaginal, and intravaginal torsion is rare. (7)

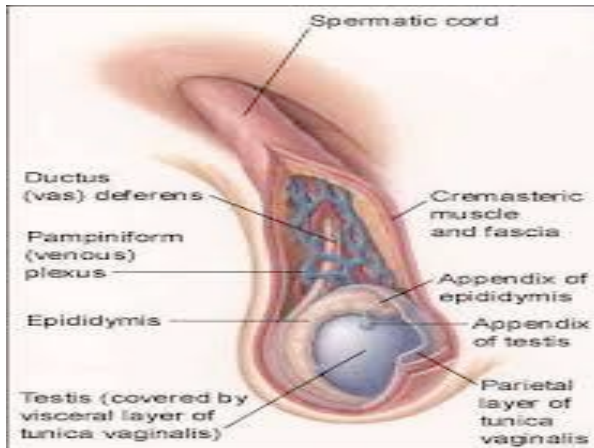


Figure 1: Testis Anatomy

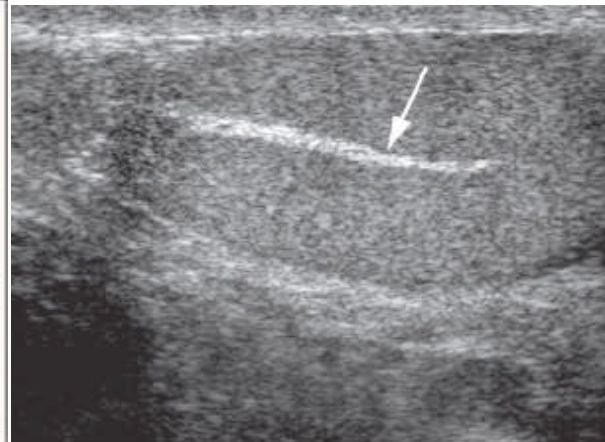


Figure 2: Mediastinum Testis (arrow)

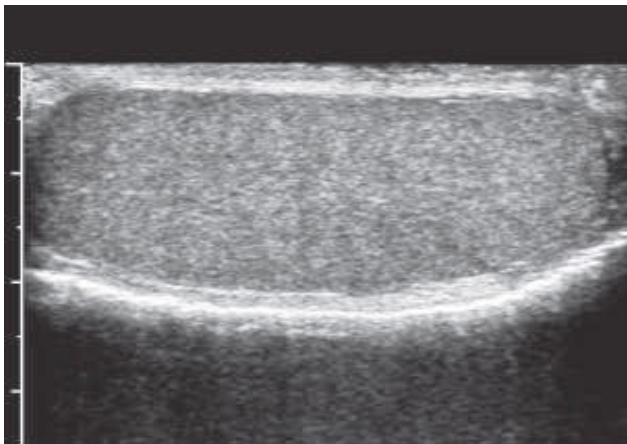


Figure 3: Normal Homogeneous echo texture

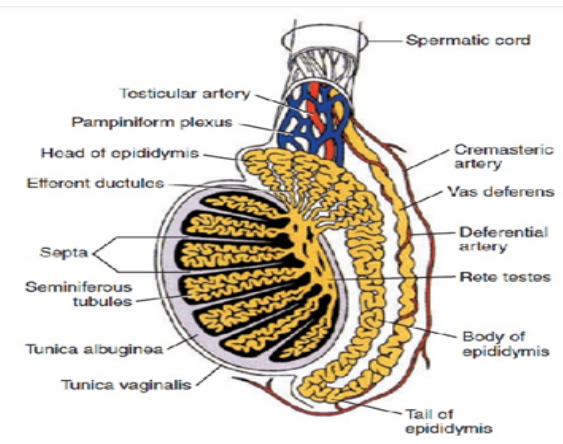


Figure 4: Normal Intrascrotal Anatomy

Figure 1: Normal Anatomy of Testis (5), (10)

Material & Method

GE Voluson S8 USG and USG seimen Acuson300USG. A total of 60 patients were taken in our study from february2021-July2021 referred from OPD/ER. **The study was conducted by retrospective and observational analysis.**

Inclusion Criteria:

1. All cases of acute scrotum admitted in our medical college
2. Referred from OPD/ER.

Exclusion Criteria:

1. Patients not willing for getting investigated.
2. Patients presented with chronic scrotal pain

Results: A total of 60 cases were included in the study group.

1. Age Distribution
2. Predisposing Factors.
3. Duration of Symptoms
4. Incidence of various causes of acute scrotum

Table 1: Age Distribution

Age Distribution	No. of Cases	Percentage
<20	10	16.6
20-40	20	33.4
41-60	20	33.4
>60	10	16.6

Max cases reported in age group 20-60 (33.4 per)

Table 2: Predisposing Factors

Factor	No. of Cases	Percentage
Trauma	12	20
Urinary Infection	09	15
Similar Episodes In Past	07	11.7
Diabetes Mellitus	09	15
Idiopathic	23	38.3

Max cases are idiopathic (38.3) min are cases have similar past episode (11.7)

Table 3: Duration of Symptoms

Duration	No. Of Cases	Percentage
0 – 24 Hrs	15	25
1 – 3 Days	24	40
4 – 7 Days	13	21.7
>7 Days	8	13.3
Total	60	100

Max cases reported in duration of 1-3 days (40per)

Table 4: Incidence of Various Causes Of Acute Scrotum

Diagnosis	No. Of Cases	Percentage
Epididymo - Orchitis	23	38.3
Torsion Of Testis	11	18.3
Torsion Of Appendix Of Testis	04	6.7
Fournier's Gangrene	06	10
Hematocele	03	05
Pyocele	11	18.3
Scrotal Wall Abscess	02	3.3

Max. Incidence of Epididymo-orchitis (38.3 per) and min incidence is scrotal wall abscess (3.3)

Discussion

Acute scrotal pain is a medical emergency. Depending on cause, the management is entirely different. Torsion of testis is surgical emergency; whereas, epididymo-orchitis is treated by medicines. In these situations, USG with color Doppler is valuable in differentiating between medically treatable and surgical emergency of scrotum and avoiding unnecessary disastrous surgical exploration.[8] Now, USG with high frequency transducer in combination with color Doppler has become the imaging modality of choice for evaluation of acute scrotum. Testicular torsion pain is of acute and severe in nature and usually begins to reduce after 6 hours of onset(9)

Result

Acute scrotum is a common case seen in the today's scenario with considerable mortality and morbidity. Acute epididymo-orchitis was the commonest cause followed by torsion of testis.

In our study most common age group involved was 41-60yrs followed by 21-40yrs. Acute epididymo-orchitis was the commonest cause for acute scrotum accounting for 33.3% of total cases, followed by torsion of testis which accounted for 21.7%, Fournier's gangrene (13.3%), pyocele (13.3%), hematocele (10%), torsion of appendix of testis (5%), scrotal wall abscess (3.4%). Majority of the patients presented with complaints for about 1-3 days. Pain in the

scrotum was the commonest presenting symptom followed by swelling of scrotum.

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