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CLINICAL AND SONOGRAPHICAL EVALUATION OF ACUTE SCROTUM

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ABSTRACT

The main aim of this study is to note the prevalence and 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. A total of 60 patients who presented with acute scrotum were included in the study.The study design is as follows.All patients were subjected to detailed history taking and physical examination. Patients underwent basic investigations like complete blood counts, bleeding time, clotting time and renal function tests, cardiac evaluation by ECG and echocardiography, if warranted and a Chest X ray.

Keywords: Modified trible assessment, Breast Lumps

1.INTRODUCTION

Acute scrotum[1] is defined as "the acute onset of pain and swelling of the scrotum that requires either emergency surgical intervention or specific medical therapy."
Acute scrotum is an emergency situation requiring prompt evaluation and urgent surgical intervention if required.
There are many causes of acute scrotum, important being torsion of testis, torsion of appendix of testis/epididymis, acute epididymoorchitis, acute hematocele, pyocele and fournier's gangrene of scrotum.
Though torsion of testis is more common in pubertal age group, it must be considered as the first differential diagnosis and in case of doubt, a prompt surgical intervention is carried out to prevent further complications.
Doppler USG of scrotum is an important diagnostic tool in acute scrotum.

AIM OF THE STUDY:

The main aim of this study is to note the prevalence and 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.

ACUTE SCROTUM

Acute scrotum is defined as,"the acute onset of pain and swelling of the scrotum that requires either emergency surgical intervention or specific medical therapy." Several acute scrotal conditions can present in similar way, testicular torsion is by far the most significant. Testicular torsion is a true surgical emergency because the testis cannot be salvaged if the patient presents late after the onset of symptoms.
Differential diagnosis for acute scrotum:

1. Torsion of testis
2. Hemotole / pyocole
3. Acute Epididymitis
4. Acute Epididymo-orchitis
5. Torsion of appendix of testis
6. Torsion of appendix of epididymis.
7. Infection of scrotum - Abscess of scrotal wall / scrotal erysipelas

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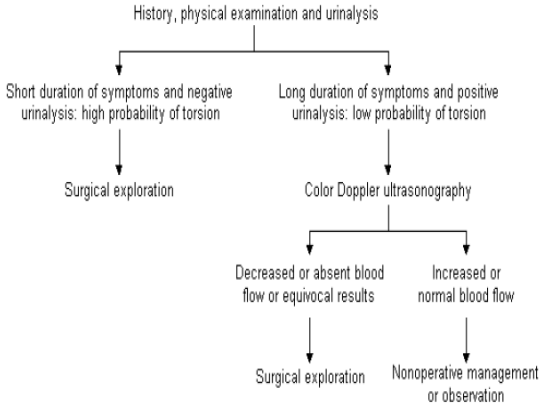
8. Gangrene of scrotum - Fournier's gangrene

9. Trauma to scrotum.
10. Miscellaneous –

i. Idiopathic scrotal oedema
ii. Scrotal fat necrosis
iii. Henoch-Schonleinpurpura
iv. HurricaineTesticulartumour
v. Ischemic orchitis

Management



ALGORITHM FOR MANAGEMENT OF ACUTE SCROTUM

USG of the scrotum with Doppler study is a must for all cases presenting with acute scrotal pain. USG of the scrotum helps to differentiate between torsion of testis from other causes of acute scrotum. In case of torsion, USG with Doppler shows absence of blood flow in the testis and sometimes twisted cord structures might be demonstrated by the USG whereas epididymo-orchitis shows increased flow to the epididymis.

If USG with Doppler is not available, urgent surgical exploration of scrotum is mandated as testicular torsion is a true surgical emergency and any delay might result in loss of viability of testis which has a lifelong morbidity of infertility. On exploration the involved cord must be untwisted, a warm pad must be put over the testis and contralateral side orchidopexy must be done. Then the ipsilateral testis must be inspected for viability and if found viable, tunica albuginea layer must be anchored to the dartos layer of the scrotum. If the testis is found to be not viable orchidectomy should be done.

A negative exploration is better than conservative management in case of doubtful diagnosis, since scrotal exploration has least long term morbidities.

Intermittent" testicular torsion is a condition in which patient presents with classical history of torsion but clinical examination and USG scrotum are normal. In this type of patients an option of elective bilateral orchidopexy must be offered before the patient develops full blown torsion of testis.

2.METHODOLOGY:

A total of 60 patients who presented with acute scrotum were included in the study.
The study design is as follows.

All patients were subjected to detailed history taking and physical examination.
Patients underwent basic investigations like complete blood counts, bleeding time, clotting time and renal function tests, cardiac evaluation by ECG and echocardiography, if warranted and a Chest X ray.

Then the patients were subjected to USG scrotum with Doppler studies, if required.

1. Based on the clinical diagnosis and the USG scrotum reports, patients were subjected to appropriate surgery, if warranted. Cases of acute epididymoorchitis were managed conservatively.
2. Patients closely monitored in the post-operative period for any complications.
3. The findings are tabulated according to the pre-designed proforma.

3.RESULTS

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

INCIDENCE OF VARIOUS CAUSES OF ACUTE SCROTUM:

Sl. No	Diagnosis	No of Cases	Percentage
1	EPIDIDYMO-ORCHITIS	20	33.3%
2	TORSION OF TESTIS	13	21.7%
3	TORSION OF APPENDIX OF TESTIS	3	5%
4	FOURNIER'S GANGRENE	8	13.3%
5	HEMATOCELE	6	10%
6	PYOCELE	8	13.3%
7	SCROTAL WALL ABSCESS	2	3.4%

TABLE 1: INCIDENCE OF VARIOUS CAUSES OF ACUTE SCROTUM

AGE DISTRIBUTION:

AGE	NO OF CASES	PERCENTAGE
<20	6	10
20 – 40	20	33.3
41 – 60	22	36.7
>60	12	20

DURATION OF SYMPTOMS:

DURATION	NO. OF CASES	PERCENTAGE
0 – 24 HRS	11	18.3
1 – 3 DAYS	22	36.7
4 – 7 DAYS	16	26.7
>7 DAYS	11	18.3

PREDISPOSING FACTORS:

FACTOR	NO OF CASES	PERCENTAGE
TRAUMA	8	13.3%
URINARY INFECTION	10	16.7%
SIMILAR EPISODES IN PAST	8	13.3%
DIABETES MELLITUS	8	13.3%
IDIOPATHIC	26	43.4%

PRESENTING SYMPTOMS:

SYMPTOM	NO OF CASES	PERCENTAGE
SWELLING	44	73.3%
PAIN	60	100%
FEVER	38	63.3%
URINARY SYMPTOMS	10	16.6%
TRAUMA	8	13.3%
NAUSEA/ VOMITING	8	13.3%

DISTRIBUTION OF SYMPTOMS:

SIDE	NO OF CASES	PERCENTAGE
RIGHT	30	50%
LEFT	19	31.7
BILATERAL	11	18.3

TREATMENT GIVEN

TREATMENT GIVEN	NO OF CASES	PERCENTAGE
CONSERVATIVE	20	33.3%
SURGICAL	40	66.7%
INCISION & DRAINAGE	2	3.3%
DEBRIDEMENT	8	13.4%
EXCISION OF APPENDIX OF TESTIS	3	5%
B/L ORCHIDOPEXY	3	5%
ORCHIDECTOMY	24	40%

4.DISCUSSION

The present study consisted of analysis of 60 patients who got admitted to RMMCH, Chidambaram during the period of august 2013 to september 2015.

In our study, AcuteEpididymo-orchitis was to be 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%).

In a case study by **Cass et al.,**[18]showed the incidence of epididimytis of about 72.5% when compared to torsion of testis which was about 20.67%.

Another study conducted by **N. H. Moharib et al.,**[19]showed that testicular torsion (33.92%) was the most common cause for acute scrotal pathology followed by epididymitis which accounted for 8.92%.

The study by **N. A. Watkin et al.,**[20] showed that torsion of the testis was the most frequent cause (39.5%) followed by torsion of appendages of testis/epididymis which was found to be 29% of the cases and 15% of the patients had epididymo-orchitis. The rest of the cases were hematocele, pyocele which was about 16%.

Barker & Paper[21], in their study noted that none of their patientswere below 14yrs. But in our study we had 4 patients who were under the age of 14yrs with majority of the cases between 41 – 60yrs (36.7%), followed by 20 – 40yrs (33.3%).

In a study conducted by **A S Cass & B P Cass**[18]**,** the maximum incidence of epididymoorchitis was 62% in contrast to our study with 33.3% incidence.

The mean age of occurrence of epididymoorchitis in the present study was 51yrs where as it was 21.3yrs according to the study done by

N A Watkin[20]**.**

In the present study, duration of symptoms varied from few hours to more than a week. The shortest duration of symptomswas 3hrs and the longest duration was 12days. In the study conducted by **Thorsteinn**[22]**,** the shortest duration of symptoms was 3hrs and the longest was 21days. The average duration of pain from onset till presentation in case of epididymo-orchitis was 3.54 days, whereas it was 4 days in the study conducted by **Ricardo et al**[23]**.**

In the present study, all the patients underwent ultrasonography except for the cases of Fournier's gangrene and Scrotal wall abscess. In this study of 60 cases, 20 cases (33.3%) were managed conservatively, who were diagnosed to have epididymo-orchitis. All other cases (66.7%) needed surgical treatment.

Patients who were treated conservatively responded well

with complete recovery. Most our patients who were treated surgically had uneventful postoperative period. All patients were followed up for a period of 1month to 6 months. None of the patients had any complications.

5.CONCLUSIONS

Acute scrotum is a common case seen in the outpatient departmentwith considerable morbidity which requires prompt evaluation.

- This is an observational study comprising of 60 cases of acute scrotum admitted at Rajah muthiah medical college and hospital, during the period of august 2013 to September 2015.
- Acute epididymo-orchitis was the commonest cause followed by torsion of testis.
- Most common age group involved was 41-60yrs followed by 21-40yrs.
- 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.
- Majority of the patients had right sided involvement.
- Conservative management was followed in 33.3% patients while the rest required surgical exploration.
- Torsion of testis is an important differential diagnosis in case of an acute scrotum which requires emergency scrotal exploration.
- Any young patient presenting with acute scrotum, torsion of testis must be considered and evaluated.
- All the cases of acute scrotum must be subjected for USG Doppler of the scrotum
- In patients with torsion testis, presenting within 6hours of onset of symptoms, testis can be salvaged.

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