

# CLINICAL PROFILE OF PATIENTS WITH ACUTE SCROTAL PAIN: AN OBSERVATIONAL STUDY

Vyas Harigopal<sup>A</sup>, Anand Singh<sup>B</sup>, Apturkar Dilip<sup>C</sup>

<sup>A</sup> - Associate Professor, Department of Surgery, Rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni

<sup>B</sup> - Assistant Professor, Department of Surgery, Rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni

<sup>C</sup> - Professor, Department of Surgery, Rural Medical College, Pravara Institute of Medical Sciences (Deemed University), Loni

## Surgery

Article Submitted on: 10  
September 2017

Article Accepted on: 29  
September 2017

### Corresponding Author

Dr Apturkar Dilip  
Professor, Department of  
Surgery  
Rural Medical College, Loni,  
Pravara Institute of Medical  
Sciences (Deemed University )  
Phone No. 9637549119, Email –  
director.research@pmpims.org

### Abstract:

**Background:** Acute scrotal swelling might be a medical emergency. While the symptoms and signs of causes of acute scrotal swelling overlap with that requiring conservative management, it becomes challenging to diagnose the patients at the earliest. The present study was conducted to evaluate common presentation and causes in patients presenting with acute scrotal swelling.

**Objectives:** To study the clinical profile of patients presenting with painful scrotum in Pravara Rural Hospital, Loni.

**Materials and methods:** The present study was an Observational study conducted during the period of September 2014 to August 2016 in Pravara Rural Hospital and Rural Medical College, Loni. Patients admitted with complaints of acute pain and swelling of scrotum irrespective of age and gender were included in the study. Patient with painless scrotal swelling and those with chronic scrotal pain were excluded from the study. Detail history was taken followed by clinical examination for probable diagnosis. Relevant haematological and radiological investigation were done to confirm the diagnosis.

**Results:** Of the 60 patients in our study, acute epididymo-orchitis (36.6%) was the dominant cause of acute scrotal swelling followed by scrotal abscess (23.3%). 50% cases of torsion of testis were found to be below 20 years of age and 50% cases were above 20 years. Most common age group presenting with acute scrotal swelling in our study was 41-50yrs (28.3%) followed by 61-70yrs (18%). Torsion of testis (13.3%) was an important differential diagnosis in case of an acute scrotum which requires urgent emergency exploration. USG with colour doppler of the scrotum was found to be useful investigation except in cases of Fournier's gangrene. Urinary tract infection was the main causative factor in acute scrotal swelling in infective pathology. The commonest causative organism was found to be E.coli (65%) followed by Klebsiella (26.6%).

**Conclusion:** Ultrasonography and surgical exploration should be sought in patients with high clinical suspicion of torsion or epididymo-orchitis, irrespective of age of the patient.

**Key words:** Clinical Profile, Scrotum, Pain

## INTRODUCTION

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”<sup>1</sup>. Several acute scrotal swellings can present in similar way of which Testicular torsion is true medical emergency because, the likelihood of testicular salvage decreases, as the duration of torsion increases, which requires urgent investigations and treatment<sup>2,3</sup>. The other conditions include, torsion of appendix testes, epididymo-orchitis, and trauma to testis, haematocele, strangulated inguinal hernia, testis tumor and idiopathic scrotal oedema<sup>4</sup>. In most the patients it should be possible to establish a reasonably accurate diagnosis based on detailed history and physical examination combined with the appropriate use of imaging studies. A variety of investigations has been described in the management of acute scrotal conditions these includes an array of tests from a simple urine examination to more sophisticated form like ultrasonography, Doppler studies and radionucleotide study<sup>5</sup>. The present study was carried out with an aim to diagnose acute testicular conditions without delay, towards which clinical evaluation seems to be very useful and can be well correlated with USG scrotum with colour doppler.

## AIMS AND OBJECTIVES

To study the clinical profile of patients presenting with painful scrotum in Pravara Rural Hospital, Loni.

## METHODOLOGY

The present study was an Observational study conducted during the period of September 2014 to August 2016 in Pravara Rural Hospital and Rural Medical College, PIMS, Loni. Institutional ethical committee clearance was taken before commencement of the study. A total of 60 patients were selected after applying following inclusion and exclusion criteria. Patients admitted with complaints of acute pain and swelling of scrotum irrespective of age and genders willing to give written consent were included in the study. Patient with painless scrotal swelling and those with chronic scrotal pain were excluded from the study.

Detail history was taken followed by clinical examination for probable diagnosis. Relevent haematological and radiological investigation were done to confirm the

diagnosis. The diagnosis in operated cases was confirmed after exploration.

## OBSERVATIONS AND RESULTS

In present study out of 60 patients maximum no of patients were in age group of 41 – 50 yrs 17 (28.3%) followed by 11(18.3%) patients in 61-70 yrs. Minimal patients were found in the extremes of age.

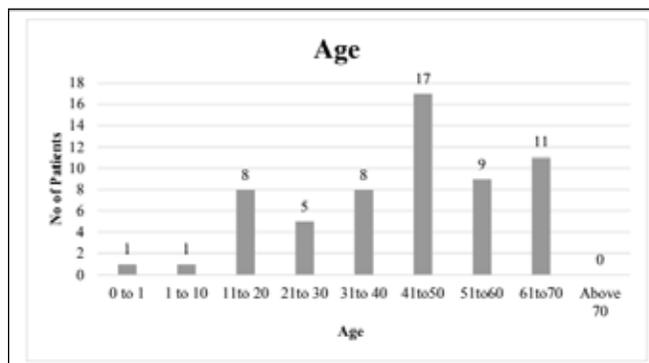


Figure 1: Distribution of patients according to age

In our study all 60 patients presented with complain of pain and swelling. Patients were divided into three groups according to the duration of symptoms namely group 1 (1-3 days), group 2 (4-6 days), group 3 (7-9 days). Maximum patients are in group 1 of duration of symptoms of 1-3 days (53.3%) and minimum patients in group 3 with duration of symptoms of 6-9 days (11.5%).

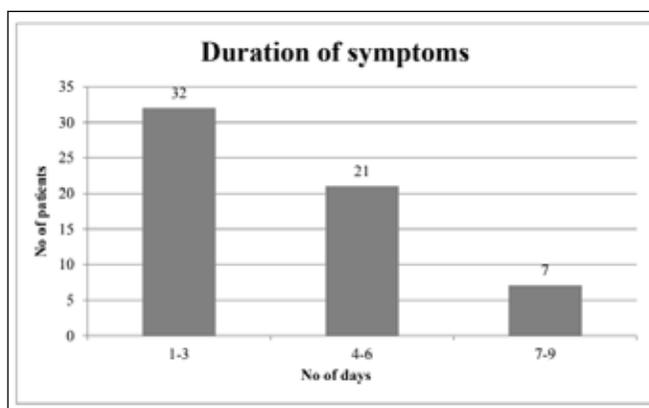


Figure No. 2: Distribution patients according to duration of symptoms:

All patients presented with Tenderness of scrotal swelling, 54 patients (90%) presented with redness, and 52 patients (86%) presented with local rise of temperature over the scrotal swelling.

Most cases included unilateral scrotal swellings with 27

patients presenting on right side (45%) and 20 patients on left (33.3%). Number of Patients with bilateral scrotal swellings is 13 out of 60 (21.6%)

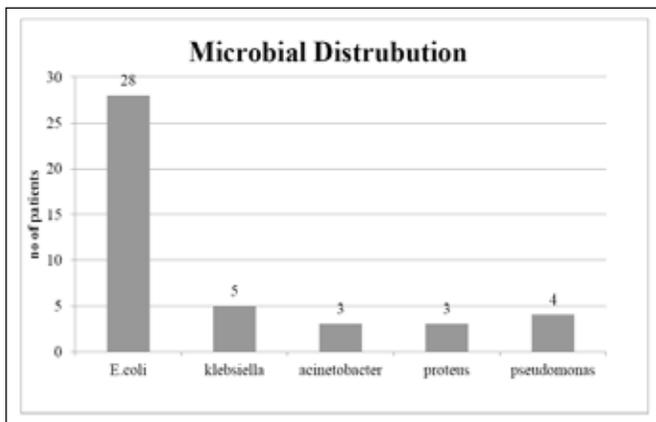
Type of Acute Scrotal Swelling	No. of Patients	Percentage
Epididymorchitis	22	36.6
Haematocoele	9	15
Scrotal Abscess	14	23.3
Torsion	8	13.3
Fournier’s gangrene	7	11.6
Total	60	100

**Table No. 1: Distribution according to the diagnosis**

When patients were divided according type of scrotal swelling that they were diagnosed with, namely epididymorchitis, haematocoele, scrotal abscesses, tortion testis, fournier’s gangrene; maximum patients were observed with epididymorchitis i.e, 22 (36.6%) and minimum patients presented with fournier’s gangrene i.e. 7 (11.6%).

It was observed that the age of patients with Torsion of testis was ranging from 2years to 62 years. Of all the 8 cases, 4 presented above the age of 20 while the remaining 4 presented below the age of 20 years. In present study out of 22 patients of epidymorchitis in age group of 41 – 50 yrs (10) i.e. 45.40%, followed by 6 patients in 51-60 yrs i.e. 27.20%

With respect to microbiological culture of pus samples, it was observed that 28 patient had E.Coli (65%) followed by klebsiella with 5 patients (11.62%) and least with acinobacter (6.9%) infection.



**Figure 3: Microbial distribution in patients by microbial culture**

In the Urine Routine Microscopy it was observed that, of all patients, WBC in 31 (51.60%) Followed by hyaline cast in 11 (18.30%) and epithelial cells in 8 patients (13.30%) were seen respectively.

## DISCUSSION

The present study consisted of analysis of 60 patients who got admitted to Pravara Rural Hospital, Loni with acute scrotal swelling. The main objective in patients with acute scrotum is to diagnose testicular torsion without delay, towards which clinical evaluation seems to be very useful and can be well correlated with USG scrotum with colour doppler.

Age of the patient is an important factor. Peak incidence of testicular torsion is in the pubertal age group (12–17 years)<sup>6, 7</sup> but in our series the age incidence was ranging from 2 to 62 years 4 cases (50%) were below age of 20years and 4 cases(50%) were above age of 20 years i.e. 35,39,40 and 62 respectively.

Epididymitis occurs at a later age<sup>8</sup>, and Cranston and Moisey<sup>9</sup> suggested that it is unsafe to make a diagnosis of epididymitis below 25 years of age. In our study, of the 22 patients diagnosed of epididymitis, 20 patients were above 20 years and 2 were below 20 years.

In epididymitis the pain is usually insidious in onset with a longer duration of pain at presentation, in comparison to testicular torsion where the pain is of sudden onset with a short duration of pain at presentation<sup>7, 10</sup>. Fever and dysuria are more common in epididymitis with reported incidences of 75 and 33%, respectively<sup>11</sup>; however a small proportion of patients with testicular torsion may also have these symptoms<sup>12</sup>. In our study 16(72.7%) had fever and 18(81.8%) patients had urinary complain.

Though there is considerable overlap in the clinical signs, there are a few differentiating features. Erythema of the scrotum is more common in epididymitis<sup>11</sup> and thickening and tenderness of the cord more common in cases of testicular torsion<sup>12</sup>. In our study 4-50% cases presented with thickening and of cord and all cases presented with tenderness. None of our case presented with erythema of scrotom.

The cremasteric reflex has been reported to be absent in

patients with testicular torsion and retained in others<sup>7, 10, 13</sup> but in our study we found it difficult to elicit the sign in the presence of severe pain.

The transverse elevated lie of the testis described in 46% by Kadish and Bolte<sup>10, 14</sup> in testicular torsion. It was observed in only 2 (25%) patients in our study.

Leukocytosis and pyuria have been reported to occur in around one thirds of patients with epididymitis<sup>11</sup>, but is occasionally observed in some patients with testicular torsion<sup>7, 14</sup>. In our study 16(72.7%) patients had leukocytosis and no patient had pyuria. Hence testicular torsion must be considered even in these patients if the clinical presentation is suspicious.

Ultrasonography with colour doppler study has been regarded to be highly reliable and beneficial in avoiding an unnecessary exploration<sup>15</sup>. However, the role of sonography has been under debate with respect to accuracy, availability, cost, delay in treatment, and as the procedure is operator-dependent<sup>6, 8, 16</sup>. In our study, sonography was accurate in all (100%) patients with testicular torsion, where it was most critical to make the correct diagnosis. Sonography was also accurate in patients with epididymitis. Melekos et al.<sup>7</sup> similarly reported accuracy of 50% in testicular torsion and 80% in other scrotal conditions. In the 8 patients lost to follow-up in our series there may have been some instances of missed testicular torsion. Reports in the literature have suggested that ultrasonography for testicular torsion has a specificity of almost 100%, but the sensitivity varies from 50 to 100%<sup>6, 14, 17, 18</sup>. In our study all cases of epididymitis were diagnosed on USG and colour doppler study and clinically correlated. Torsion of testis was ruled out hence unnecessary exploration was avoided. Therefore the sonographic interpretation must be in correlated with the clinical diagnosis, and patients in whom torsion testis is strongly suspected clinically should be subjected to exploration.

Radionuclide scan has been reported to be more accurate in diagnosing testicular torsion<sup>5</sup>. However, we did not use this method as this facility is not available to us.

Epididymitis was the commonest cause of acute scrotum. The condition is often idiopathic with infective, chemical, reactive and systemic diseases being the other causes<sup>19</sup>.

In our study, Acute epididymo-orchitis was to be the

commonest cause for acute scrotum accounting for 36.6% of total cases, followed by Scrotal abscess which accounted for 23.3%, Hematocele (15%), Torsion of testis (13.3%), Fournier's gangrene (11.6%). Our study is supported by Cass et al<sup>20</sup> and Laura Lorenzo and Roman Roge<sup>21</sup> as opposed to study conducted by N. H. Moharibet al<sup>22</sup> and N. A. Watkin et al<sup>23</sup> which showed that testicular torsion was the most common cause for acute scrotal pathology followed by epididymitis. In a study conducted by A S Cass & B P Cass<sup>24</sup>, the maximum incidence of epididymo-orchitis was 62% in contrast to our study with 33.3% incidence. This difference in the frequency of occurrence of disease might be due to difference in the population or a smaller sample size.

Barker<sup>17</sup> in their study noted that none of their patients were below 14 years. 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%).

## CONCLUSION

In our study acute epididymo-orchitis (36.6%) was the dominant cause of acute scrotal swelling followed by scrotal abscess(23.3%). 50% cases of torsion of testis were found to be below 20years of age and 50% cases were above 20 years. Most common age group presenting with acute scrotal swelling in our study was 41-50yrs (28.3%) followed by 61-70yrs (18%). Pain and swelling in the scrotum was the commonest presenting symptom observed in all cases (100%). Torsion of testis (13.3%) was an important differential diagnosis in case of an acute scrotum which required urgent emergency exploration. USG with colour doppler of the scrotum was found to be useful investigation except in cases of Fournier's gangrene. Urinary tract infection is main causative factor in acute scrotal swelling in infective pathology. The commonest causative organism was found to be E.coli (65%) followed by Klebsiella(26.6%).

## ACKNOWLEDGEMENT

We acknowledge all the faculty members of the Department of Surgery and Directorate of Research PIMS-DU for their help and cooperation for this study

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