

Clinico-Pathological Study of Acute Scrotal Swelling in Southern Odisha

Sushanta Kumar Das¹, Sanjeeb Kumar Pradhan², Santoshi Prasad Adhikari³

¹Department of General Surgery, Maharaja Krushna Chandra Gajapathi Medical College and Hospital, Berhampur, Odisha, India. ²Department of General Surgery, Maharaja Krushna Chandra Gajapathi Medical College and Hospital, Berhampur, Odisha, India. ³Department of General Surgery, Maharaja Krushna Chandra Gajapathi Medical College and Hospital, Berhampur, Odisha, India.

ABSTRACT

BACKGROUND

Acute scrotal swellings are common in both children and adults. It is a medical emergency which warrants immediate attention. Though these swellings are frequently encountered, many a times correct diagnosis is not made or delayed, and testis needs to be sacrificed.

METHODS

In this study 60 cases of acute scrotal swelling were studied from to evaluate the possible aetiological factors and common presentations in patients presenting with acute scrotal swelling. Cases were evaluated based on history, signs, symptoms, and clinical examination.

RESULTS

The most common cause of scrotal swelling is epididymo-orchitis (41.67 %); the second most common is pyocele (18.33 %). The maximum incidence of scrotal swelling occurred in the age group of 31 - 40 years (45.00 %), followed by 21 - 30 (23.33 %) years age group. All cases had swelling of scrotum, and were associated with pain. Out of 60 cases, 56.67 % cases were given conservative treatment and 43.33 % cases were treated surgically. There was no mortality in our study and all cases showed good recovery in six month follow up.

CONCLUSIONS

Most common cause of scrotal swelling is epididymo-orchitis. Second most common is pyocele, followed by haematocele. Presence of scrotal swelling with pain is seen in all cases along with fever in some cases, but not in all. Patients with Fournier's gangrene can present with septicaemia with shock. Most common predisposing factor is idiopathic. Earliest presentation was recorded in case of haematoma followed by scrotal trauma, followed by Fournier's gangrene. Presence of urinary symptoms, with similar complaints in the past, is an important predisposing factor for acute scrotum. Involvement of right side is more common than left side, particularly in epididymo-orchitis.

KEYWORDS

Scrotal Pain, Acute Scrotum, Epididymo-Orchitis, Pyocele, Fournier's Gangrene, Ultrasonography (USG)

Corresponding Author:

Dr. Santoshi Prasad Adhikari,

Plot – 1249/3188/3735,

Santoshi Nagar, Bomikhal,

Bhubaneswar,

Odisha – 751010, India.

E-mail: drsantoshiprasad007@gmail.com

DOI: 10.18410/jebmh/2020/467

How to Cite This Article:

Das SK, Pradhan SK, Adhikari SP.

Clinico-pathological study of acute

scrotal swelling in Southern Odisha. J

Evid Based Med Healthc 2020; 7(40),

2251-2254. DOI:

10.18410/jebmh/2020/467

Submission 21-05-2020,

Peer Review 01-06-2020,

Acceptance 08-07-2020,

Published 05-10-2020.

Copyright © 2020 Sushanta Kumar Das

et al. This is an open access article

distributed under Creative Commons

Attribution License [Attribution 4.0

International (CC BY 4.0)]

BACKGROUND

Scrotal swellings are some of the most common conditions seen in surgical out-patient department affecting both children and adults. Acute scrotum is defined as "acute onset of pain and swelling of the scrotum" that requires either emergency medical or surgical intervention.¹ Acute scrotum can occur due to a wide number of conditions. These include: torsion of testis, torsion of appendix testis, epididymo - orchitis, scrotal wall abscess, strangulated inguinal hernia, Fournier's gangrene, scrotal haematoma, testicular tumour etc. Some of the rare causes of acute scrotum include conditions like 'idiopathic scrotal oedema, scrotal fat necrosis, and Henoch Schonlein purpura. This study intends to look into the various pathologies of the scrotum and its contents, which present as scrotal swelling; and to highlight upon the best way to approach them; in order to restore the anatomy and physiology and functionality to the maximum possible level.

We wanted to study the various types of acute scrotal swellings in patients admitted to Postgraduate Department of Surgery, MKCG Medical College & Hospital, Berhampur.

METHODS

The present study was an observational study, conducted between July 2017 and June 2019. Duration of study was 2 years. The material for this study was obtained from the patients admitted with complaints of acute pain and swelling in the scrotum, in the Postgraduate Department of Surgery, MKCG Medical College & hospital, Berhampur.

Exclusion Criteria

Patients with painless scrotal swelling, chronic scrotal pain, open trauma, scrotal ulcers, patients suffering from inguinal hernia were excluded from the study. Patients were included in the study after consent and patients not willing to take part in the study were excluded from the study.

RESULTS**Incidence of Various Types of Lesions**

In our study, the most common cause of acute scrotal swelling was epididymo orchitis (25 cases) which accounts for 41.66 % of total cases followed by pyocoele (11 cases) which accounts for 18.33 % of cases. Among others Fournier's gangrene, scrotal abscess and epididymitis accounted for 4 cases (6.66 %) each. In this study no cases of testicular torsion or varicocele were encountered.

Incidence of Age

According to this study, the maximum incidence of scrotal swelling occurred between the group of 31 - 40 years of age (27 cases, 45.00 %) followed by the group of 21 - 30 (14 cases, 23.33 %) years of age. 12 cases (20.00 %) cases

belonged to age group of 14 - 20 years. Only 1 case (1.66 %) belonged to 61 - 70 year age group. No cases were encountered in the age groups of 0 - 7 and 7 - 14 years age group.

Incidence of Occupation

Acute scrotal swellings were found to be more common in people who were subjected to strenuous work, involving manual labourers like farmers & labourers. In this study of 60 cases, 58.33 % (35 cases) were manual labourers. Only 41.66 % cases (25 cases) were sedentary workers such as students, clerks etc.

Duration of Symptoms

Duration of symptoms varied from 1 day to as long as 1 month. The shortest duration of symptoms in this study was 30 hours & longest duration was 27 days. No cases presented within 24 hours after onset of pathology, whereas 11.67 % (7 cases) presented within 7 days of onset, 36.66 % (22 cases) presented within 16 - 30 days after onset of symptoms. A maximum number of 48.34 % (29 cases) presented in the time period of 8 - 15 days, whereas 3.33 % (2 cases) presented after 30 days of onset.

Presenting Symptoms

The presenting symptoms of various pathologies were observed in this study. At the time of first contact of the patient with the OPD, all of them had scrotal swelling and pain as presenting complains. 70.00 % (42 cases) patients had history of fever while 8.33 % (5 cases) patients had history of burning micturition. 5 % cases (4 cases) had symptoms of pain abdomen.

Predisposing Factors

In this study 23.33 % (14 cases) were found having history of scrotal trauma. 63.33 % (38 cases) had idiopathic onset. 13.34 % (8 cases) had onset after UTI. Out of these 14 cases of scrotal trauma cases, 7 progressed and presented as haematocoele and 1 case presented as pyocoele and 1 presented as epididymo-orchitis. 2 cases having history of scrotal trauma presented as scrotal abscess and 2 cases presented as Fournier's gangrene. No cases were detected having TB or syphilis as predisposing factor.

Treatment

In this series of 60 cases, 56.67 % (34 cases) were managed conservatively. 25 cases of epididymo - orchitis, 5 cases of epididymitis, 4 cases of orchitis were managed conservatively with antibiotics, analgesics, scrotal support and rest. 1 case of Fournier's gangrene presented with septicaemic shock which was treated conservatively. After the stabilisation of vitals, serial debridement was done over a period of 2 weeks followed by implantation of testes in thigh. Patient was discharged after a hospital stay for 19 days. Out of 60 cases, 43.33 % (26 cases) were managed

with surgical treatment. This comprised of 11 cases (18.33 %) of pyocele, 7 cases (11.66 %) of haematocele, 4 cases (6.66 %) of scrotal abscess and 4 cases (6.66 %) of Fournier's gangrene. Surgical treatment consisted of surgically by incision & drainage of pus, debridement and regular dressings, skin grafting. Various surgical methods were selected based of the individual case. Out of 60 cases, 11 cases (18.33 %) were of pyocele which were treated by drainage and eversion of sac. 7 cases (11.66 %) were of haematocele which occurred after various modes of trauma to scrotum. These cases were treated with incision, evacuation of haematoma. Out of the 4 cases (6.66 %) of Fournier's gangrene all 4 were treated by serial debridement. In 3 cases, after the complete excision of necrotic tissue, the scrotal sac was closed by suturing. In one case where there was extensive involvement of scrotal sac, the sac couldn't be closed. So entire sac was excised and testes were implanted in medial aspect of thigh.

Duration of Hospital Stay

The average duration of hospital stay was divided into 4 groups and cases were distributed in these groups. 50 % (30 cases) had hospital stay of 0 - 5 days. 41.66 % (25 cases) had hospital stay of 6 - 10 days. Shortest duration of hospital stay was for a case of epididymo - orchitis (3 days). Longest duration of stay was 19 days which was a for a case of Fournier's gangrene. The case underwent serial debridement of necrotic tissue for a period of 2 weeks. After this for testicular salvage, both the testes were implanted in medial aspect of thigh.

DISCUSSION

The present study is a prospective study, which comprised of 60 patients, admitted in the Postgraduate Department of General Surgery, MKCG Medical College, with complaints of acute pain and swelling of the scrotum, who agreed for treatment, during the period of my study i.e. from July 2017 to June 2019. The study was done with aim to study the clinical presentation, pathophysiology, differential diagnosis and management of acute scrotum.

Incidence of Various Type of Lesions

In this study, clinical analysis of 60 cases of acute scrotal swelling is presented. Epididymo - orchitis was found to be the commonest condition followed by pyocele and haematocele. The rare acute conditions like scrotal fat necrosis, Henoch Schonlein purpura, testicular tumour etc. have not been encountered in the present study. So, no remarks can be made about those conditions. No cases of testicular torsion was encountered was encountered in this study. Abul F, Al - Sayer H, Arun N in their study consisting of 40 patients of acute scrotal swelling and pain concluded that that the most common aetiology of acute scrotal swelling was epididymitis (60 %), followed by testicular torsion (27.5 %), Acute idiopathic scrotal oedema (2.5 %) and torsion of the appendages (10 %).²

In the study conducted by Cass et al. 72.57 % had epididymitis compared to 20.67 % cases of testicular torsion.³ In study conducted by N.H. Moharib et al. testicular torsion (33.92 %) was the most common cause for acute scrotal pathology. Epididymitis was found in 8.92 % cases.⁴

In a study conducted by N.A. Watkin et al. torsion of the testis was the most frequent diagnosis (39.5 %). Torsion of twisted testicular appendage was found in 29 % of cases and 15 % had epididymo-orchitis.⁵

In a study conducted by Paul S Sanjay, acute epididymo - orchitis (30 %) was the commonest cause of acute scrotal pathology followed by Fournier's gangrene (24 %).⁶

Incidence of Age

In the present study maximum number of patients presented in the age group of 31 - 40 years which had 45.00 % (27 cases), followed by 21 - 30 years which had 23.33 % (14 cases). 14 - 20 years had 20.00 % (12 cases), 51 - 60 years age group had 5.00 % (3 cases). 41 - 50 year age group had 3.33 % (2 cases). 61 - 70 years and 71 - 80 year age group had 1.67 % (1 case) each. No cases were detected in the age group of 0 - 14 years.

As per Paul S Sanjay et al. maximum number of cases of Fournier's gangrene and acute epididymo-orchitis were observed in the age group pf 25 - 35 year. Mean age of occurrence being 33.5 years and 33.06 years respectively.⁶

Ruiz - Tovar J et al, in their study consisting of 70 patients, reported a mean age of 57.9 ± 13.5 years in the study of seventy patients.⁷ The study conducted by Yan-Dong Li et al. which consisted of 51 patients reported the average age of presentation of FG to be 51.6 years.⁸ According to present study it was found to be 27.8 years.

Duration of Symptoms

The time of presentation were from as low as 2 day to as long as 36 days. No cases presented within 24 hours after onset of pathology. In the study conducted by Thorsteinn the shortest duration of symptoms was 3 hrs. and the longest was 21 days.⁹ The average duration of pain from onset till presentation in case of epididymo-orchitis was 14.16 days where as it was 4 days in a study conducted by Del Villar et al.¹⁰ The average duration of symptoms from onset till presentation in case of Fournier's gangrene was 7.5 days in this study.

Presenting Symptoms

All cases had swelling of scrotum, associated with pain at the time of presentation. 70.00 % (42 cases) patients had history of fever while 8.33 % (5 cases) patients had history of burning micturition. 5 % cases (4 cases) had symptoms of pain abdomen.

Predisposing Factors

In this study maximum incidence was idiopathic i.e. 63.33 % cases. 23.33 % (14 cases) were found having history of

scrotal trauma. 63.33 % (38 cases) had idiopathic onset. 13.34 % (8 cases) had onset after UTI. In a study conducted by Malik et al, onset after idiopathic causes was 32.8%.¹¹ Similarly according to the study by Del villar idiopathic cause in 25.5 % cases. In a study conducted by Sanjay PS et al, there was history of trauma in 6 cases of haematocele and in one case of torsion testis. There was history of urinary symptoms in 9 cases of epididymo-orchitis.⁶

Investigations

In our study there was increase in total leucocyte count in 53 cases, showing acute infection. In his series, Gislason showed that leucocytosis was present in 44 % cases where as in our study it was 88.3 %.

Treatment

Out of 60 cases, 56.67 % cases were managed conservatively by empirical antibiotics, NSAIDS, rest and ice pack for pain. New clinical guidelines currently recommend the use of carbapenems or piperacillin - tazobactam. 43.33 % cases were managed surgically. 18.33 % were of pyoceles which were treated by drainage. 11.66 % were of haematocele which occurred after various modes of trauma to scrotum. These cases were treated with incision, evacuation of haematoma.

Out of the 6.66 % of Fournier's gangrene all 4 were treated by serial debridement. In 3 cases, after the complete excision of necrotic tissue, the scrotal sac was closed by suturing. In one case where there was extensive involvement of scrotal sac, the sac couldn't be closed. So entire sac was excised and testes were implanted in medial aspect of thigh.

CONCLUSIONS

The most common cause of scrotal swelling is epididymo-orchitis. The second most common cause is pyocoele, followed by haematocele. Scrotal swelling with pain is present in all cases along with fever in some cases. Patients with Fournier's gangrene can present with septicaemia with

shock. Most cases are idiopathic. Earliest presentation was recorded in case of haematoma followed by scrotal trauma, followed by Fournier's gangrene. Presence of urinary symptoms, and similar complaints in the past is an important predisposing factor for acute scrotum. Involvement of right side is more common than left side, particularly in epididymo-orchitis.

Financial or Other Competing Interests: None.

REFERENCES

- [1] Rabinowitz R, Hulbert JW. Acute scrotal swelling. *Urol Clin North Am* 1995;22(1):101-105.
- [2] Abul F, Al-Sayer H, Arun N. The acute scrotum: a review of 40 cases. *Med Princ Pract* 2005;14(3):177-181.
- [3] Cass AS, Cass BP, Veeraraghavan K. Immediate exploration of the unilateral acute scrotum in young male subjects. *J Urol* 1980;124(6):829-832.
- [4] Moharib NH, Krahn HP. Acute scrotum in children with emphasis on torsion of spermatic cord. *J Urol* 1970;104(4):601-603.
- [5] Watkin NA, Reiger NA, Moisey CU. Is the conservative management of the acute scrotum justified on clinical grounds? *Br J Urol* 1996;78(4):623-627.
- [6] Sanjay PS, Diganta B, Jishan A. A clinico - pathological study of acute scrotal swelling. *Paripex – Indian J of Research* 2016;5(9):11-15.
- [7] Ruiz-Tovar J, Córdoba L, Devesa JM. Prognostic factors in Fournier gangrene. *Asian J Surg* 2012;35(1):37-41.
- [8] Li YD, Zhu WF, Qiao JJ, et al. Enterostomy can decrease the mortality of patients with Fournier gangrene. *World J Gastroenterol* 2014;20(24):7950-7954.
- [9] Gislason T, Noronha RF, Gregory JG. Acute epididymitis in boys: a 5- year retrospective study. *J Urol* 1980;124(4):533-534.
- [10] Ricardo DVG, Ireland W, Cass AS. Early exploration following trauma to the testicle. *J Trauma Acute Care Surg* 1973;13(7):600-601.
- [11] Malik AM, Sheikh S, Pathan R, et al. The spectrum of presentation and management of Fournier's gangrene - an experience of 73 cases. *J Pak Med Assoc* 2010;60(8):617-619.