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A Prospective Study of Management of 100 Cases of Acute Epididymo-Orchitis At A Tertiary Center

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Abstract

Purpose: Not many Indian data exists on the incidence and prevalence of epididymo-orchitis.Our aim was to study the outcome of different stages of acute epididymoorchitis, the distribution among different age groups and occupation and the different modalities of management for different etiologies and different stages.

Methods- This prospective study was conducted on 100 patients of Epididymitis /Epdididymo-orchitis.

Results: In our study, the majority of the subjects belonged to the age group of 46 to 60 years (31.0%). The next common age group was 15 to 30 years (27.0%). In the study, the majority of the subjects required admission at the hospital for the complete management of the condition (73.0%). Remaining 27.0% cases sought treatment on outpatient basis. The most common etiopathology was observed to be idiopathic (65.0%) in the study. The next common cause was found to be urinary tract infection (28.0%). funiculitis was observed to be the condition most commonly associated with epididymo-orchitis (57.0%).

Conclusion: E. coli was the most common organism which was isolated in urine cultures. Early and proper empirical treatment (and later on according to culture sensitivity report) with bed rest and scrotal support should be started as early as possible. This prevents the complications and requirement of operative intervention.

Keywords: Epididymo-Orchitis, Gonococcal Urethritis, Chlamydia. Dysurea.

Introduction

Acute epididymo-orchitis (AEO) is the most common cause of acute scrotum. Acute epididymo-orchitis is an acute inflammatory disease of both the epididymis and testis. It most often presents unilaterally and occurs because of a specific or nonspecific urinary tract infection (urethritis, prostatitis, or cystitis) through the lymphatic vessels or ductus deferens.

It can also be the result of viral infections, trauma, autoimmune disorders, or even amiodarone use. A bladder outlet obstruction (BOO), transurethral diagnostic or surgical manipulations, surgeries on the lower urinary tract, or even different urogenital

malformations are also thought to play a significant role in the etiology of Acute epididymo-orchitis. Acute epididymo-orchitis is always accompanied by a subfebrile or febrile temperature and intense scrotal pain, which may radiate up along the funiculus spermaticus.

Numerous acute scrotal conditions may present in a similar way, torsion testis is by far the most significant. As the duration of torsion increases, the chance of testicular salvage decreases, so torsion testis is a true surgical emergency. Various other conditions that manifests in similar way to torsion testis include torsion of appendix testis, hematocele, testicular trauma, Henoch Schonlein purpura, strangulated inguinal hernia etc.

In most of the cases, it should be possible to arrive at a reasonably accurate diagnosis based on clinical examination and detailed history along with the proper usage of imaging studies.

For the management of Acute epididymo-orchitis, a variety of investigations have been described. These include a set of tests from simple urine examination to more advanced forms like ultrasonography, colour doppler studies.

Acute epididymo-orchitis might resolve with antibiotics and analgesics ,but in case of associated scrotal abscess, torsion or Fournier's gangrene early exploration of scrotum remains to be one of the most predominant therapeutic modality.

Material and Methods

The material for this study was extracted from the patients presented to surgical outpatient department with swelling and pain in the scrotum, as well as patients admitted as inpatients with similar complaints from August 2020 to December 2022.

Method of collection of data

A prospective study of 100 cases to be carried out to assess effectiveness of conservative and surgical management in different stages of acute epididymoorchitis.

Diagnostic procedures include physical examination, standard laboratory tests, scrotal ultrasound investigation, and microscopic examination of urethral discharges if they are present.

Treatment will be started immediately after diagnosis of acute epididymoorchitis and should include antibiotics, analgesics, and, if no improvement is seen and abscess developed then patient will be taken for surgery.

Clinical features, symptomatology, duration, investigations, operative findings, post operative complications were entered in the proforma and analysed. Total number of patients studied was 100.

Inclusion Criteria

All patients with complaints of acute swelling and pain in the scrotum (suggestive of acute epididymoorchitis clinically or based on imaging study)irrespective of age.

Exclusion Criteria

Patients with painless swelling of scrotum and chronic scrotal pain.

Result

Clinical studies of 100 cases of acute epididymo-orchitis were carried out during August 2020 to December 2022 in Government civil Hospital, P.D.U. Medical College, Rajkot.

In our study, the majority of the subjects belonged to the age group of 46 to 60 years (31.0%). The next common age group was 15 to 30 years (27.0%). The mean age of the subjects was 44.51 years. The youngest patient in this study was 1 year and the eldest was 80 years old. In study done by Thomas H. Trojian[5] a bimodal distribution was noted with the peak incidence occurring in men 16 to 30 years of age and 51 to 70 years of age. In the study done by N.A.Watkin et al[4] the mean age was 21.3 years. First age peak in younger subjects might be due to sexual

activity, strenous physical excercise, bicycle riding. second peak age group coincides with that of BPH.

In our study the average duration of presentation was 5 days, minimum being 3 days and maximum 10 days. In a study conducted by Thorsteinn et al[1] the longest duration of symptoms was 21 days and shortest was 3 hours. The average duration of symptom in Epididymo-orchitis was 6.06 days in study done by Veerappan.R[7] Shorter duration of presentation in our study might be due to easy access to medical service here.

In the study, the majority of the subjects required admission at the hospital for the complete management of the condition (73.0%). Remaining 27.0% cases sought treatment on outpatient basis. In study done by Thomas H. Trojian[5] ,epididymo orchitis accounted for one in 144 (0.69%) of clinic consultations in the USA in men between 18 and 50 years. though rate of hospitalization is not found in majority of studies.

	Frequency (N)	Percentage (%)
Pain Over Scrotum	100	10.0%
Swelling Over Scrotum	100	100.0%
Lower Abdominal Pain	22	22.0%
Inguinal Swelling	44	44.0%
Urinary Symptoms	26	26.0%
Pus Discharge Per Urethra	3	03.0%
Fever	34	34.0%

In our study series of 100 cases, 95% of cases were manual laborers. Only 5% of cases were sedentary workers such as clerks, students, etc. In a study done by VEERAPPAN.R[7] out of 70 cases, 61.43% of cases were manual laborers and 38.57% of cases were sedentary workers in both studies Fournier's gangrene was common among sedentary or bed-ridden subjects.

The most common etiopathology was observed to be idiopathic (65.0%) in the study. The next common cause was found to be urinary tract infection (28.0%).In the study done by ESHIOBO IREKPITA [6] in 58 cases, shows prostatitis or urinary tract infection in two (3.4%),36 (62.1%) had BOO , three (5.2%) had history of trauma or instrumentation. urinary retention due to BPH or urinary tract infection found to be well established factor for causation of epididymo orchitis in both studies.

		Frequency (N)	Percentage (%)
Etiopathology	Idiopathic	65	65.0%
	Trauma	1	1.0%
	Post-Operative	5	5.0%
	Perineal Infection	1	1.0%
	Urinary Tract Infection	28	28.0%

In our study, the majority of the subjects had developed the condition over the right portion (43.0%), followed by the left side of the genitalia (34.0%). Among the remaining, 23.0% cases were affected bilaterally. In this study Bilateral involvement was mostly seen in Fournier's gangrene and scrotal wall cellulitis. In the study done by ESHIOBO IREKPITA [6] in 58 cases, left side was involved in 46.6% and the right side was involved in 27.6%, bilateral in 24.1 % cases. we were unable to relate this laterality to outcome of treatment.

In our study the most common mode of presentation was pain and swelling over the scrotal region (100%), followed by inguinal swelling(44%) and fever in 34%.In study done by Thomas H. Trojian[5] ,most common mode of presentation was also scrotal pain and swelling. In the study done by Eshiobo Irekpita[6] common modes of

presentation were with fever, pain, and swelling in eleven (19%), fever and pain in two (3.4%), and swelling and pain in 45 (77.6%).In our study ,during examination almost all cases showed redness, tenderness and warmth over scrotum(100%),cord thickening was present in 44 cases and pus discharge from scrotum was associated in 38%.In study done by Veerappan.R[7] also showed almost all cases of epididymo-orchitis presented with redness and tenderness over scrotum ,cord thickening was noted in 36% cases. early and acute presentation were common in our study compare to other studies , might be related to easily accessible medical service and urban area.

Hemogram and analysis of urine were not that conclusive but were more supportive to the clinical diagnosis. In our study of 100 cases, all cases showed raised total leucocyte count (100%) , the mean TLC was estimated to be 13831.00 ± 4638.87 cells/cumm. raised blood sugar and urine sugar were present in 15 cases, all of them were known case of diabetes mellitus. Two cases showed presence of HIV. In study done by Veerappan.R[7] urine examination showed presence of albumin in 2 cases, Urine sugar was present in 6 cases, Presence of WBC's in 12 cases. Thorsteinn et al[2] showed that leucocytosis was present in 44% of cases. Urine culture and sensitivity was done for most of the cases especially who presented with urinary symptoms. Urine culture was positive in 7 cases. Pus culture and sensitivity was done for infected cases. Escherichia Coli and Klebsiella were found in the sample of 6 and 1 individuals respectively. In the study, only 38.0% cases presented with pus discharge, and only 1 individual among them showed the presence of Pseudomonas in the discharge. In the study done by Eshiobo Irekpita[6] of the 35 men for urethral swab/urine culture and sensitivity eight (22.9%) had E. coli, ten (28.5%) had Klebsiella.

In study done by Veerappan.R[7], 10% cases showed growth in urine culture, most common being E. Coli.

Ultrasound scrotum was done in all cases. On Ultrasonography, testis was diffusely hypoechoic and swollen in case of acute epididymo-orchitis. The epididymis was swollen and hyperechoic. In case of pyocele and hematocele, the echogenicity surrounding the testis was not uniform showing presence of purulent collection with the scrotal sac thickened. However, it is sometimes difficult to differentiate pyocele from hematocele sonographically. Scrotal wall found to be thickened and edematous in cases of scrotal wall cellulitis.

In our study, funiculitis was observed to be the condition most commonly associated with epididymo-orchitis (57.0%). The next commonly associated conditions were hydrocele (26.0%) and scrotal abscess (15.0%).In study done by Veerappan.R[7], series of 70 cases, 32 cases were epididymo-orchitis, 2 cases of orchitis, 10 cases of epididymitis, 2 cases of scrotal wall cellulitis .In a large case series reported by Cass et al[2] 20.67 cases of testicular torsion was encountered compared to 72.57% cases of epididymitis. In the study conducted by N.H. Moharib et al[3] The most common cause of acute scrotum was torsion testis (33.92%) followed by torsion of Hydatid of Morgagni. Epididymitis was seen in 8.92% cases. In the study of N.A.Watkin et al[4] testicular torsion was the most frequent diagnosis, 29% of the cases was found to be torsion of testicular appendage and 15% had epididymo-orchitis. The remaining 16% consisted of hematocele, hydrocele, etc.

In this series of 100 cases, 63 cases (63.00%) were managed conservatively. These cases were managed conservatively with antibiotics, analgesics, scrotal support and rest. Conservative management was given for 7 to 14 days. Remaining 37.0% cases had to be

subjected to surgical procedure (37.0%).In study done by Veerappan.R[7] series of 70 cases, 46 cases (65.71%) were managed conservatively. Incision and drainage of scrotal wall abscess was done in 13 cases. In Fournier's gangrene, only debridement was done in 17 cases, multiple debridements with secondary suturing was done in 2 cases. Orchidectomy was done in a total of 14 cases. In our study, the commonest surgical procedure required was debridement (45.9%). The next common procedure was orchidectomy which was performed in 37.8% cases.In study done by Veerappan.R[7] Scrotal exploration and drainage of testicular abscess was done in 1 case, Incision and drainage of scrotal wall abscess was done in 3 cases, Orchidectomy was done in 10 cases.

On analyzing the relation of each associated condition with respect to the type of management, the study showed statistically significant association in terms of scrotal and testicular abscesses, hydrocele, funiculitis, and fournier's gangrene. The individuals with these conditions had required surgical management in majority cases.

In our study, the most common etiopathologies were observed to be idiopathy, followed by urinary tract infection irrespective of the type of management. Thus the study did not find any significant association between the etiopathology and type of management. The mean duration of stay of the subjects at the hospital in the study was 6.07 ± 3.05 days.

The minimum and maximum duration was 5 and 21 days respectively. In a study done by Veerappan.R[7], average hospital stay was 21.75 days in patients with Fournier's gangrene and average hospital stay for surgically managed patients was 10.13 days.

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Ethical approval: The study was approved by the institutional ethics committee.

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