



Evaluation of Epididymo-Orchitis-A Study of 100 Cases

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Abstract

Background: Acute epididymo-orchitis is a common clinical problem in urological practice. It is not an uncommon disease in our country to cause work loss particularly in active group of people. **Aim of the study:** The aim of this study was to see the predisposing factors involved, aetiopathology and progression of disease process. **Methods:** This prospective study was conducted in department of surgery, Kumudini Women's Medical College Hospital, Tangail from April 2008 to March 2009. Hundred patients of inflammation of epididymis and testis were included in this study. **Results:** Out of 100 patients, majority (48%) were in monogamous relationship. All patients (100%) had scrotal pain, 22% had scrotal swelling, 59% had fever, 32% had dysuria and 11% had urethral discharge. All patients presented with tenderness of the testis and epididymis and 82% cases had both epididymal and testicular swelling. Thirty two percent cases had urinary tract infection, trauma and promiscuous sexual contact were associated with the disease in 2% and 18% cases, respectively. History of masturbation was noted in 18% cases. By urine routine microscopy 28% had pus cell and 03% had RBC in urine, 16 cases were positive in urine culture, among 15% were E.coli and 01% were found Klebsiella. Forty patients were tested Chlamydial CFT and 16(40%) were found positive, out of 12 Filarial CFT tested 01(8.33 %) was found positive, Gram staining of urethral discharge revealed Neisseria gonorrhoeae in 02(18.18%) cases. In maximum cases no aetiological factor was found. Majority cases under 35 years were infected with Chlamydia and patients older than 35 years were mostly infected with E.coli. **Conclusion:** This study reflects that maximum of our study patients report to hospital nearly at right time with relatively better health status and outcome of available treatment facilities are satisfactory.

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INTRODUCTION

Acute onset of testicular pain with swelling is common presentation of young adult in surgical outdoor. Most patient presents with surgical scrotum but careful observation and critical diagnosis is needed to take decision for

exploration. As it is a vital organ and also relates with patients psychological aspect a non-operative approach is desirable both for the patient and physician. Among the causes of acute scrotum, epididymo-orchitis ranks in the top. Epididymitis and subsequent orchitis is a clinical condition resulting from inflammation

of epididymis and testis are commonly related to infection in the urinary tract (cystitis, urethritis, prostatitis) which presumably reach the epididymis and the testis through either the vas deferens or lymphatics of the spermatic cord.^[1] Abscess formation, testicular infarction, development of chronic pain, swelling and infertility are complications of epididymo-orchitis.^[2] Epididymitis is a common form of scrotal swelling, occurring in a wide age range but typically increasing in frequency with age.^[3] The cause of epididymo-orchitis varies with age of the patient. In young males, the sexually transmitted pathogens such as Chlamydia Trachomatis and Neisseria Gonorrhoea are the most common pathogens. Both are associated with arthritis. Epididymo-orchitis is less common in older males but when it does occur, it is most often due to infection secondary to urinary tract obstruction and instrumentation.^[4] Although epididymo-orchitis is uncommon in children, is usually associated with congenital genitourinary tract abnormality and infection with negative rods. In all age groups epididymitis may be related to a systemic infectious or inflammatory disease, e.g. tuberculosis, brucella, sarcoid and cryptococcus. These disorders usually cause chronic rather than acute epididymitis.^[5] An attempt has been made in this small series of hundred patient to identify the problems related to epididymo-orchitis in our patients. It is an important disability causing loss of work of active group people. There is always a fear of mutilation and many patients do not seek medical advice until the condition becomes chronic or advanced. Though the small study of hundred cases will represent a picture of the disease but to make any firm conclusion about

the disease in our country, needs a more elaborate study and analysis.

Objectives

1. To see the predisposing factors involved.
2. To observe the progression of disease process.
3. To study clinical presentation and management of the disease.
4. To compare the outcome with other studies done in home and abroad

MATERIAL AND METHODS

This prospective study was conducted in department of surgery, Kumudini Women's Medical College Hospital, Tangail from April 2008 to March 2009. Hundred patients of inflammation of epididymis and testis were included in this study. A questionnaire has been formulated, data collection done by principle author. Patients were investigated, diagnosed and received appropriate therapy. The departmental records were reviewed subsequently and relevant notes obtained. Data was processed and analyzed using SPSS-24 (Statistical Package for Social Sciences) software. Data processed on categorical scale was presented as frequency and percentage. While the data presented on continuous scale it was presented as mean standard deviation and analyzed with the help of student T test. The merged data was then presented in the table and chart.

Inclusion criteria:

1. All male patient with acute scrotum.
2. Cooperative patient.
3. Patient who has not treated outside the hospital earlier for same reason



4. All hospitalized patient and willing for follow up.

Exclusion criteria:

1. Noncooperative patient
2. Patient with testicular torsion, testicular tumor diagnosed earlier.
3. Already diagnosed as chronic epididymo-orchitis

RESULTS

[Table 1] shows age group distribution of the study population, minimum age was 15 years and maximum age was 65 years. Majority age incidence was second and third decade. Table 1 also shows majority (53%) respondent were industrial worker, followed by 22% were businessman, 17% were student and 08% were day labor. [Table 2] shows the various features of clinical presentation. In this study hundred percent of the patients presented with scrotal pain, 22% patient with total swelling, 59% with fever, 32% with dysuria and 11% with urethral discharge. [Table 3] shows the presenting signs, all patients were presented with tenderness of the testis and epididymis, 82% cases had both epididymal and testicular swelling, 07% and 11% cases had only epididymal and testicular swelling respectively. Among other associated features 2% were varicocele and 7% were secondary hydrocele. [Table 4] shows 09% cases had bilateral involvement, right side had little higher (49%) incidence than left side (42%). [Table 5] shows 32% had urinary tract infection, 2% trauma and 18% promiscuous sexual contact. History of masturbation was noted in 18% cases. Twelve percent cases had history of previous operation (i.e. operation for

hydrocele, inguinal hernia and enlarged prostate), 4% cases had urethral instrumentation (TURP and urinary catheterization), 6% cases had mumps and 4% cases had from prostatism. [Table 6] shows the investigation results of the study population. Leukocytosis was found in 20% cases, ESR was raised in 18% cases and 10% had eosinophilia. In routine urine microscopy pus cell was found in 28% cases and RBC in 3% cases. 16 cases had positive urine culture, among them 15% were E. coli and 1% was Klebsiella. Forty patients were tested Chlamydial CFT and 16 (40%) were found positive, out of 12 Filarial CFT tested 1 (8.33%) was found positive. Gram staining of urethral discharge revealed Neisseria gonorrhoea in 02 (18.18%). All cases were evaluated by Ultrasonogram of scrotum. Evidence of inflammation was found in 100% cases, suspected tuberculosis (mixed echogenicity/calcification) and hydrocele were found in 5% and 7% cases respectively. [Table 7] shows various classes and subclasses of the disease in this series based on history, clinical findings and investigations. In maximum cases no aetiological factor was found. [Table 8] shows majority (55.56%) cases under 35 years were infected with Chlamydia and patients older than 35 years were mostly infected with E.coli. [Table 9] shows that all the patients (100%) received either one or combination of chemotherapeutic agents. Follow-up of the cases in present series was a difficult as maximum patients were industrial workers but the initial cure rate was excellent. Three patients required surgical intervention. One tuberculous epididymo-orchitis patients underwent orchidectomy. [Figure 1] shows majority 48% were monogamous, 18%

promiscuous sexual contact and 34% were no sexual contact.

Table 1: Demographic characteristics of the study population (n=100)

Characteristics		Number of patients	Percentage
Age group	11-20 years	14	14
	21-30 years	44	44
	31-40 years	26	26
	41-50 years	10	10
	51-60 years	4	4
	>60 years	2	2
Occupation	Industrial worker	53	53
	Businessman	22	22
	Student	17	17
	Day laborer	8	8

Table 2: Clinical presentation (n=100)

Presentation	Number of patients	Percentage
Pain in the scrotum	100	100
Swelling in the scrotum	82	82
Fever	47	47
Dysuria	32	32
Urethral discharge	11	11

Table 3: Physical findings (n=100)

Signs	Number of patients	Percentage
Tenderness of the testis and epididymis	100	100
Swelling of both epididymis and testis	82	82
Scrotal oedema	22	22
Associated varicocele	02	02
Associated hydrocele	07	07
Enlarged Prostate	04	04

Table 4: Site of the lesion

Site	Number of patients	Percentage
Right	49	49
Left	42	42
Both	09	09
Total	100	100

**Table 5:** Predisposing factors

Factors	Number of patients	Percentage
Urinary tract infection	32	32
Local trauma	02	2
Promiscuous sexual contact	18	18
Masturbation	18	18
Previous operation in urogenital system	12	12
Mumps	06	6
Urethral instrumentation	04	4
Prostatism	04	4
Previous acute episode	14	14
No predisposing factors	52	52

Table 6: Investigations (n=100)

Finding	Number of patients	Percentage
Leukocytosis (10000/cmm)	20	20
Raised ESR (>20 mm in 1st hour)	18	18
Eosionophilia	10	10
Pus cell	28	28
RBC	3	3
E. coli	15	15
Klebsiella	1	1
Chlamydial	16	40
Filarial CFT (n=12)	1	8.33
Neisseria gonorrhoeae	2	18.18
Evidence of inflammation (Hypoechoic)	100	100
Suspected Tuberculosis (Mixed echogenicity/calcification)	5	5
Hydrocele	7	7

Table 7: Aetiology (n=100)

Diagnosis	Number of patients	Percentage
E. coli	15	15
Klebsiella	01	1
Chlamydia	16	16
Filaria	01	1
Tuberculosis	05	5
Neisseria Gonorrhoeae	02	2
Mumps orchitis	06	6

Traumatic	02	2
Idiopathic	52	52

Table 8: Relation between age group with organism (n=46)

Diagnosis	≤35 years n=27 (%)	>35 years n=19 (%)	Total
E.coli	01(3.70)	14(73.68)	15
Klebsiella	-	01(5.26)	01
Chlamydia	15(55.56)	01(5.26)	16
Filaria	01(3.70)	-	01
Tuberculosis	02(7.41)	03(15.79)	05
Neisseria Gonorrhoeae	02(7.41)	-	02
Mumps orchitis	06(22.22)	-	06

Table 9: Treatment outcome (n=100)

Treatment	Patients no	Percentage	Remarks
Conservative treatment	97	97	Drainage of abscess in 2 cases
Surgical intervention	3	3	Orchidectomy in 1 case (Tubercular not responding to anti TB regimen)

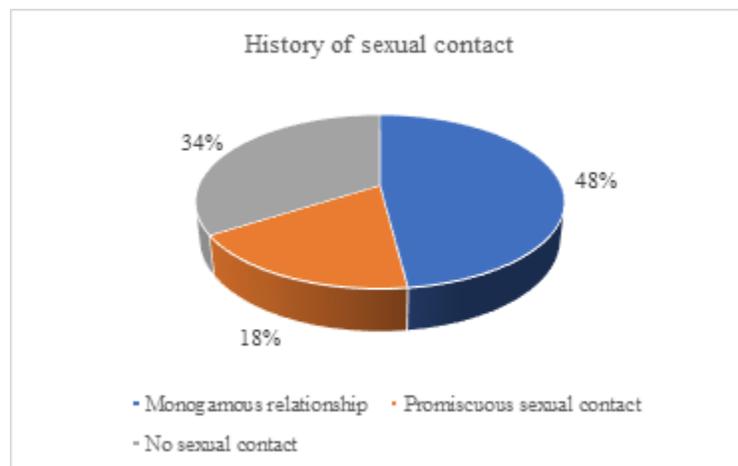


Figure 1: History of sexual contact of the study population

DISCUSSION

Epidemiological data on epididymo-orchitis is not available in our country so the incidence of epididymo-orchitis in the general population is unknown. Epididymitis/orchitis accounted for 1 in 350 (0,29%) of all consultations and was

ranked fifth among genitourinary diagnoses in those aged 18-50 years.^[6] To carry out a scientific study in a developing country like us is cumbersome. Economic constraint, mismanagement, lack of effective health education, personal awareness and specially no availability of modern hospital information



system to bring out a real picture of study is really difficult in spite of all dedicated approach. This study was carried out in such an environment, an attempt has been made at the Kumudini Women's Medical College Hospital, Tangail, to overview few aspects of epididymo-orchitis. In this study, minimum age was 15 years and maximum age 65 years. Majority age incidence was second and third decade. In the study of Lee et al.^[7] and with 70 percent in the study of Mitemeyer et al.^[8] In a retrospective study in the USA army, the peak incidence was in those 20-29 years old (49%).^[8] In present study showed majority (48%) were in monogamous relationship, 18% had promiscuous sexual contact and 34% were no sexual contact, 32% cases urinary tract infection, trauma and promiscuous sexual contact were associated with the disease in 2% and 18% cases respectively. History of masturbation was noted in 18% cases. Twelve percent cases had history of previous operation (ie, operation for hydrocele, inguinal hernia and enlarged prostate), 4% cases had urethral instrumentation (TURP and urinary catheterization), 6% cases had mumps and 4% cases had prostatism. Kaver I, et al.^[9] study showed 71% cases had sexual exposure, Lee CT et al.^[7] study showed 69% cited prostitutes as the source of sexual contact. Mulcahy FM,^[10] studied the prevalence of sexually transmitted infection in 40 men presenting with acute epididymo-orchitis in Leeds. Chia et al.^[11] found that 25 (48 %) patients out of 52 had exposure to sexually transmitted disease. These differences with this series are probably our patients are religiously motivated and more prone to trauma due to industrial activity. In a study in the USA army showed similar incidence of trauma (13.5%), possibly as

a result of activation of infection lying dormant in the epididymis.⁸ In this study hundred percent of the patients presented with scrotal pain, swelling were present in 22%, Forty seven had fever 32% had dysuria and 11% had urethral discharge (09 %) cases had bilateral involvement, right side had little higher (49%) incidence than left side (42%). Suankwan U et al.^[12] showed the clinical presentations of tuberculous epididymo orchitis included scrotal mass (80 %), scrotal pain (44%), micturition syndrome (8%), urethral discharge (4%), and scrotal fistula (4%). One third of the patients had pulmonary tuberculosis. Four patients (16%) had underlying human immunodeficiency virus infection. Memish ZA and Venkatesh S study showed all patients complained of swollen painful testicles.^[13,14] Other presenting symptoms included undulant fever (96%), chills (54%) and arthralgia (23%). In 2006 Philip J et al.^[15] from Liverpool, UK reported clinical findings of 195 males presenting with an acute history of testicular pain and swelling, 25 gave a history of mumps 4-11 days earlier. Three had bilateral orchitis and two needed scrotal exploration to exclude torsion. Scrotal ultrasonography findings varied from increased vascularity to abnormal testicular echo texture. Three had bilateral orchitis and two needed scrotal exploration to exclude torsion. Berger et al.^[16] noted scrotal oedema in 60 percent cases. because in that series coliform or pseudomonas were isolated in 12 of 16 patients aged >35 years. The clinical features in this series are generally in agreement with other series and standard textbook.^[6,8,9,11,16,17,18,19,20,21,22,23,24,25] Hundred percent patients presented with local pain. and 82% presented with scrotal swelling. Acute epididymo orchitis affect the right and left

sides with equal frequency.^[21] In this series, the incidence in left side is little higher: 54.3 percent in the left side and 45.7 percent in the right side. Bilateral involvement is rare: Lee et al.^[7] and Mitemeyer et al.^[8] noted 7 and 9 percent bilateral cases, respectively, and in this series, 9% cases had bilateral involvement, right side had little higher (45%) incidence than left side (42%). In this study leukocytosis was found in 20% cases, ESR was raised in 18% and 10% had eosinophilia, these findings were non-specific. By urine routine microscopy 28% had pus cell and 03% had RBC. Sixteen patients had positive urine culture, among them 15% were E.col and 01% was Kiebsiella. Forty patients were tested Chlamydial CFT and 16(40%) were found positive, out of 12 Filarial CFT tested, 01(8.33%) was found positive. By Gram staining of urethral discharge Neisseria gonorrhoeae was found in 02(18.18 %) cases. All cases were evaluated by Ultrasonogram of scrotum, evidence of inflammation was found in 100% cases, suspected Tuberculosis (Mixed echogenicity/calcification) and Hydrocele were found 5% and 7% respectively. Current study showed majority (55.56 %) cases less than 35 years were infected with Chlamydia and patients older than 35 years were mostly infected with E.coli (73.68%). Mulcahy FM.^[10] study reported 45% Chlamydia trachomatis infection in patients aged less than 35 years and only 9% aged over 35. Escherichia coli was found in 55% patients aged 35 or over. All the patients (100%) received either one or combination of chemotherapeutic agents according to European guideline (2012).^[26] Follow up of the cases in present series was difficult as maximum patients were industrial workers but the initial cure rate was excellent. Three

patients required surgical intervention. One tuberculous epididymo-orchitis patients underwent orchidectomy. According to European guideline for management of epididymo-orchitis empirical therapy should be given to all patients with epididymo-orchitis before culture. results are available. For epididymo-orchitis most probably due to any sexually transmitted pathogen ceftriaxone 500 mg intramuscularly single dose plus doxycycline 100 mg by mouth twice daily for 10-14 days if it is most probably due to chlamydia or other non-ganococcal organisms (ie where gonorrhoea is considered unlikely as microscopy is negative for Gram-negative intracellular diplococci and no risk factors for gonorrhoea are identified) tetracycline 100 mg by mouth twice daily for 10-14 days or ofloxacin 200 mg by mouth twice daily for 14 days is to be considered. It is vital that sensitivity testing be undertaken before ofloxacin is given. For epididymo-orchitis most probably due to enteric organisms. ofloxacin 200 mg by mouth twice daily for 14 days or ciprofloxacin 500 mg by mouth twice daily for 10 days. Corticosteroids have been used in the treatment of acute epididymo-orchitis but have not been shown to be of benefit. In those with severe epididymo-orchitis or features suggestive of bacteraemia, inpatient management of fluid and electrolyte balance is required. Intravenous broad spectrum therapy directed towards coliforms and Pseudomonas Aeruginosa should be considered: cefuroxime 1.5 g two times daily with or without gentamicin for 3-5 days until fever subsides; in those with severe allergy to penicillin, use ciprofloxacin 500 mg twice daily. For epididymo-orchitis of all causes where the patient is allergic to cephalosporins and/or



tetracyclines: ofloxacin 200 mg by mouth twice daily for 14 days and anti-tubercular drugs were given in suspected TB cases.^[26]

Limitations of the Study

In our study, there was small sample size and for a short period of time. Unfortunately, a good number of patients fail to report to hospital or report lately, because of their ignorance, poverty and lack of adequate healthcare facilities. Laboratory facilities are inadequate and accessible to limited number people. In the present setup, the main areas of lacking to perform a scientific study are recordkeeping, preserving and hospital information system.

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CONCLUSIONS

This study was carried out in a narrow spectrum and focused to a low socioeconomic group of people. But it certainly reflects, at least to some extent, the overall situation prevailing in our country though the true incidence is much higher. However, this study reflects that maximum of our study patients report to hospital nearly at right time with relatively better health status and outcome of available treatment facilities are satisfactory. We are handicapped in follow-up of patients. Moreover, we are not in a set up to have a scientific approach to a problem and to make a firm conclusion. A further elaborate study is needed to have an epidemiological data on the disease and a multicenter study is essential to evaluate natural history of the disease.

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