Epididymorchitis a review of 85 cases in Mosul

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Aim: The aim of this study is to provide abase data about the epididymorchitis frequency, etiology and clinical presentation in Mosul province.

Design: A prospective case series.

Setting: study conducted at the private clinic and the out patients clinic of department of urology, at Al Jumhoury teaching hospital, Mosul.

Methods: all patients with acute scrotal pain reviewed regarding their age, side of affection, presenting symptoms and signs, causative microorganisms and the investigations tools used in confirming the diagnosis. during the period of Jan. 2001 to Dec 2004.

Results: The number of our patients was (85), their age ranged (16 – 72) years with mean of (28.5) years. Right side was affected in 44(52%) patients and left side was involved in 40 (47%) patients, while one (1%) patient had bilateral affection. Fever as a presenting symptoms (above 37.5C°) was found in 72 (85%) patients , chills in 30 (35%) patients, while proceeding dysuria was found in 34 (40%) patients, scrotal swelling and erythema of the scrotal skin in 56 (65%) patients.

Sixteen (19%) patients have had urethral discharge of them four (5%) patients their direct smear staining were positive for gonococcal infection. General urine examinations and cultures and sensitivity were performed for all of our patients, which was positive for microorganism in only 45 (53%) patients.

One (2%) patient has had history of hypospadius. Three (3.5%) patients gave history of recent wedding (complicated honey moon cystitis). Twelve (14%) patients proved to have Lower Urinary Tract symptoms (LUTs) due to Benign Prostatic Obstruction (BPO) and another two (2%) patients were well known to have urethral stricture .Sixteen (19%) patients were under went recent instrumentation and /or catheterization, four (5%) of them had history of open prostatectomy.

Ultrasonographic examinations done for all most all of the patients and their reports revealed enlargement of the epididymis and the testis with variant amount of hydroceles. Doppler ultrasound was done for those suspicious cases of torsion of the testis, where they reported increase in blood flow in the affected epididymis and testis and this help confirming the diagnosis.

Conclusions: Acute epididymorchitis in our locality is similar in age incidence of those in other countries, the causative microorganisms again nearly similar to what had been found in their reports , the usual investigating tools used for proving the diagnosis are still validated and of great role.

Introductions:

Acute epididymorchitis is a clinical condition caused by invasion of the epididymis and its testis by a wide range of infective microorganisms and less commonly by other inflammatory processes, the symptoms are usually unilateral and developed over a few days[1]. It is characterized by acute scrotal pain and tender swelling of the epididymis with it is testis, fever, and it might be preceded by dysuria [1, 2].

A non infective epididymorchitis some times arises from a high pressure in the Prostatic urethra causing reflux of the infected urine up the vasa , when unusual exertion or violent strain while the bladder is full causing injection of urine into the vasa under pressures[3].Blood borne infections are rare and less common but it may be suspected when there is E coli, Streptococcal, Staphylococcal or proteus infections with out evidence of UTI[3].

The true incidence of acute epididymorchitis in general population is unknown Collin`s et al found that epididymorchitis account for (1:350) of all consultation to the out patient clinics [4]. Epididymorchitis is common in young sexually competent patients. The peak incidence was in those (20 – 29) years of age, although, all ages might be affected (4months –76 years) [4].

Epididymorchitis again is common in those elderly peoples with features of (LUTs) because of Benign Prostatic obstruction, carcinoma of the prostate and urethral strictures [5]. There was no racial neither side of predilection. And bilaterality is rare, it may reached to (9%) [4]. The mean age was (28years) [5]. Epididymorchitis may occur in those tall peoples with lifting of heavy things [3].

In this study we provide a base data about the frequency, etiology, and clinical presentation of epididymo0orchitis in Mosul province.

Patients And Methods:

All patients with the diagnosis of acute epididymo-orchitis were involved in this study, when they visited a private clinic and the out patient clinic of department of urology, at Al Jumhoury teaching hospital in Mosul during the period of Jan. 2001 to Dec. 2004.

The analyzed data were depend mainly on the their medical history and clinical examinations which includes patient's age, affected side, associated symptoms, past medical and surgical history and history of recent instrumentations. General and local clinical examinations. The laboratory tests involve the general urine examinations (GUE), urinary cultures and sensitivity, direct gram staining for those with urethral discharge. Total and differential white blood cells count (WBCs). The imaging studies used in evaluation of our patients were ultrasonography and color Doppler ultrasonography.

Resaults:

From our study, we obtained (85) patients with epididymorchitis, their age was ranged from (16 – 72) years with mean age of (28.5) years as shown in table (1) and figure (1). The right side was affected in 44 (52%) patients, while the left side affection was found in 40 (47%) patients, and one (1%) patient discovered to have bilateral involvement of his epididymis and testes as shown in figure (1).

The peak incidence of epididymorchitis was among the young age group of (<20 – 30) years, and this involved 39 (46%) patients. Seventy two (85%) patients were febrile and their temperature was above (37.5C) and proceeding dysuria was found in 34 (40 %) patients and chills was found in only 30 (35%) patients.

Sixteen (18%) patients have had urethral discharge associating their complaints, all patients were send for direct gram stain smear, only four (5%) patients were have positive gram staining smear hence proved to have active Gono coccal infection, while the rest showed non specific urethritis.

There were peripheral leukocytosis (WBC count above 10 x10 ^{9}/L) in 60 (70%) patients. GUE and urinary cultures and sensitivity were performed for all of our patients, but the cultures were positive in only 45 (53%) patients including four (9% of culture positive patients) their culture were positive for Gono coccal infection). The predominating microorganism was E coli as its seen in 29 (65% of culture positive patients), while Proteius mirabilis was shown in five (11%) patients, moderate growth of Pseudomonas aregenosa was found in three (6%) patients.

On the other hand Klebsiella species was positive in two patients (5%) and one patient for Streptococcus and another one for Staphylococcus as shown on table (2) and figure (2).

Scrotal swelling and erythema were obvious in 55 (65%) patients. Three (3.5%) patients were presented within the first week after wedding night with severe pain and swelling of the hemiscrotum one of them was complaining of pain in both testes as shown in table (3).

Lower urinary tract symptoms (LUTs) due to benign Prostatic obstruction were found in 12 (14%) patients .Eight (9%) patients recently underwent instrumentation or catheterization for any reasons. Finally four (5%) patients

their prostatectomy operation were complicated by epididymorchitis.

Discussion:

The results of our study were in concomitant with what had been written in international literatures and researches. The peak incidence of affection with epididymorchitis in our study was among 39 (46%) patients whom their ages were ranged from (<20 – 30) years, the mean age among this group was 28.5 years and this may goes with what Tylor-Robinson published, they found the mean age in their (24 men) study in London was 28years[15].

If we widening the range of our patients age to involve those of 40 years old, the peak incidence of affection with epididymorchitis will be among 60 (70%) patients, this is near what Mittiemeyer et al found in their study when they found (49%) and (70%) respectively[5]. On the other hand Kaver and Mutzkin found that (35%) of their patients were aged (< 30) years [7].

The presentation; we found that 34 (40%) patients have had dysuria, chills in 30 (35%) patients and 73 (85%) patients showed fever; in Kaver study they were discovered that chills and dysuria were present in (25%), (33%) and fever in (75%) of their patients respectively.

An erythema of the scrotum and swelling were found in 55 (65%) patients and a peripheral leukocytosis in 65 (70%) patients, while in Kaver study, they stated that erythema and leukocytosis were positive in (62%) and (64%) of their patients. Regarding positive bacterial urine cultures, we found that 45 (53%) of our patients where culture positive for microorganisms, against (24%) only in Kaver study [7]. Chlamydia trachomatis is the commonest bacterial sexual infection in developed countries. When the urethro-vasal reflux considered being the cause [8].

In our study 8 (9%) patients were proved to have gonococcal infections by gram staining of their direct smear, but in Seattle series[2] gonorrhea was accounted for (20%) of the patients aged (<35) years and it is a major cause of acute epididymitis in Durban, South Africa[9],

Regarding those patients aged (>40) years in our study we found the causative micro-organisms were as follow; E coli (65%), Proteus spp. (11%), Gonococcus in (9%), Pseudomonas (6%), Klebsiella (5%) and (2%) for Staphylococcus and (2%) for Streptococcus. In older men aged (>35) years, the responsible microorganism that cause UTI are the predominant pathogens provoking epididymitis, and E coli is commonest [2, 10, 11].

In other series of patients aged (>40) years with acute epididymorchitis, (32%) had demonstrable E coli urinary infection; no growth found in culture of urinary sample of (53%). Klebsiella and Pseudomonas were occasional causes [12]. Mittemeyer et al were identified positive cultures in (21%) of their patients, of them (55%) were E coli, (14%) Pseudomonas and (4%) Proteus spp[5]. Gram-positive organism (Staphylococcus aureus and Streptococci) are occasionally identified by urine culture in men with acute epididymorchitis [13]. Urological factors predisposing to acute epididymitis are more likely to be found in older patients and those with bacteruria. Fifteen (18%) patients were found to have (LUTs) due to BPO, urethral strictures, and hypospadius.

In a study of a men aged (>60) years with epididymorchitis, lower urinary tract symptoms were identified in (56%) patients, due to BPO, carcinoma of the prostate and urethral stricture[10] .While in another study they found that the incidence of urological conditions associate epididymorchitis was (3.4%) and it includes urethral strictures, hypospadius, neurogenic bladder and hydronephrosis [5].

Recent instrumentation or surgery may predispose to epididymorchitis caused by gram-negative rods [2, 5], and it is account for (13%) [12], in our study the Eight (9%) patients have had recent instrumentation and or catheterization, while four (5%) patients underwent open prostatectomy. Acute epididymitis may complicate open prostatectomy and an incidence of (13%) was reported with a higher risk in those with preoperative UTI [3].

On clinical examination the time relapse after establishment of the pain and hence the presentation, is of importance, in early

presentation a physician might be able to identified, and discriminate the testis from it is epididymis here the epididymis will be more tender than the testis.

In late presentation and this is the usual, one can only with difficulty differentiate by examination the testis from the epididymis this partially because of the involvement of the testis by the inflammatory process and the amount of the reactionary hydroceles collected within the tunica vaginalis is large enough to makes the maneuver of the examination difficult. The site of the testis in relation to the scrotum (whether it is high or settled at the bottom) is helping sign for differentiation from torsion testis as well as the lie of the testis , if it is transverse in lie (Angel sign positive) this raise the possibility of torsion more than the epididymorchitis.

Ultrasonography and by B-mode usually clarifying that the epididymis and the testis is enlarged, hypo echoic with collection of fluid around the them [16]. The color-flow Doppler ultrasound increase in blood flow and hypervasculrity due to hyperemia and this modality of study considered to be of first choice in evaluating patients with epididymorchitis in recent study of (40) patients with acute scrotal pain, color Doppler imaging had a sensitivity of (70%) for epididymorchitis with (88%) specificity, and for testicular torsion a sensitivity of (82%) and a specificity of (100%) [15, 17].

Radionuclide scrotal imaging may help in diagnosing and in differentiating between epididymorchitis and torsion of testis [18].

Conclusions:

Acute epididymorchitis in our locality is similar in age incidence to those in other countries, the causative microorganisms again nearly similar to what had been found in our study , the usual investigating tools used for proving the diagnosis are still validated and of great role.

Table (1); Age incidence.

Age groups in years	No. of patients	%
<20	3	4%
21 ----30	39	46%
31 ----40	18	21%
41 ----50	7	9%
51 ----60	13	15%
61 ----70	3	4%
72 >	2	2%
Total	85	100%

Table (2); Results of bacterial cultures

Results	No. of patients	%	Results	No. of patients	%
Positive bacterial cultures	45	53%	Negative bacterial cultures	40	47%
Causative m .o.					
E coli	29	65%			
Proteius spp	5	11%			
Gono coccus	4	9%			
Pseudomonas	3	6%			
Klebsiella	2	5%			
Streptococcus	1	2%			
Staphylococcus	1	2%			
Total	45	53%		40	47%

Table (3); Main presenting symptoms

Symptoms & signs	No. of patients	Percentage
Fever	72	85%
Dysuria	34	40%
Chills	30	35%
Erythema & scrotal swelling	55	65%
Urethral discharge	16	19%
Leukocytosis	60	70%

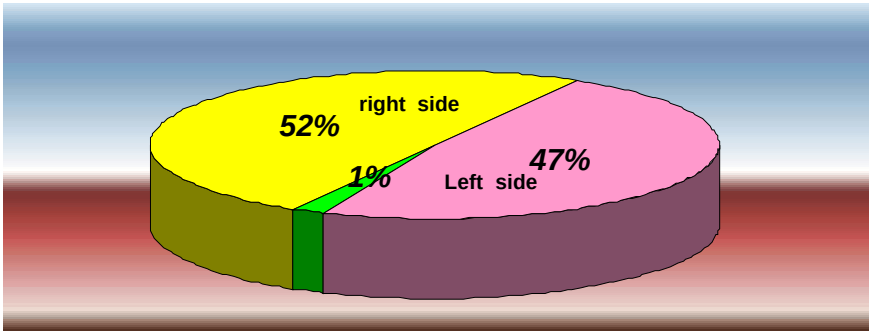

Figure (1); Distribution according to the side affected

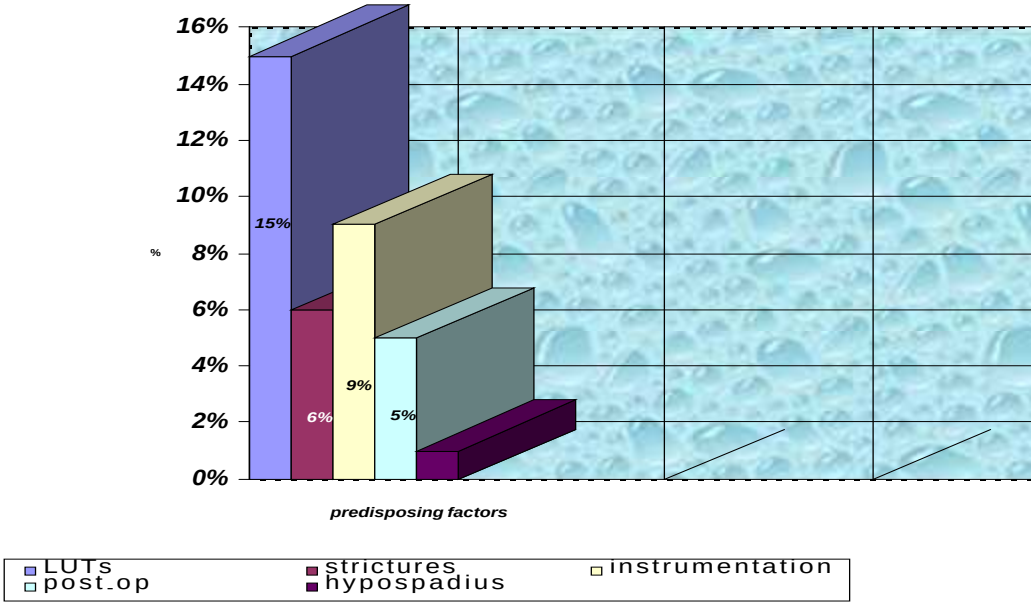

Figure (2); Distribution of the results of the cultures

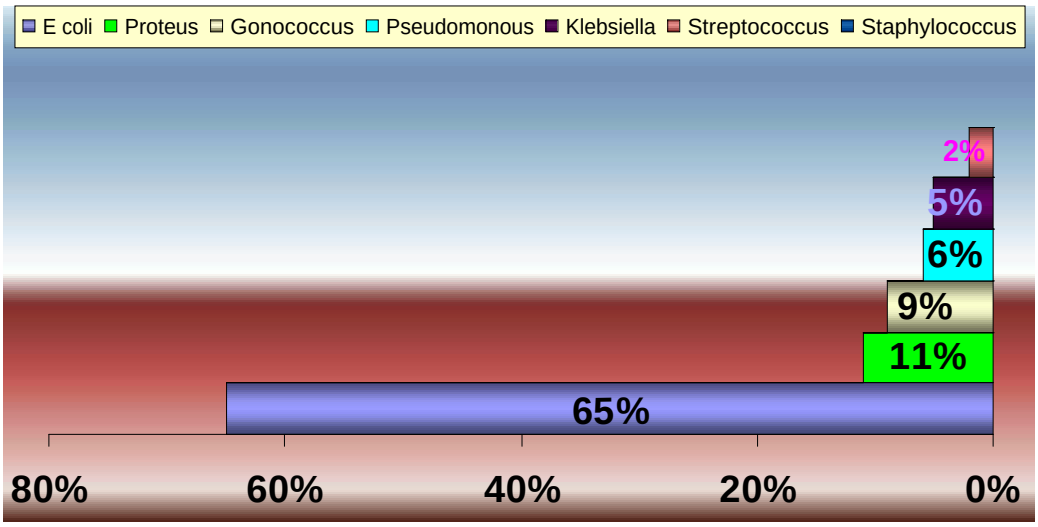

Figure (3); distribution of urological problems

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