



EVALUATION OF INFLAMMATORY SCROTAL PATHOLOGIES BY ULTRASOUND AND COLOUR DOPPLER

Radiodiagnosis

Dr. Parth Shah

Third Year Resident Department Of Radiodiagnosis, SBKS MIRC , Waghodia , Vadodara.

Dr. Chandra Raychaudhuri*

Head Of Department , Department Of Radiodiagnosis, SBKS MIRC , Waghodia , Vadodara.
*Corresponding Author

ABSTRACT

Scrotum is commonly involved by various inflammatory pathologies. It is often difficult to decide whether a palpable scrotal mass is intratesticular or extratesticular. Moreover, the clinical examination may over look significant pathology and physical signs elicited may be improperly interpreted. Most of these pathologies can be diagnosed radiologically using sonography with colour Doppler as the primary modality. This study aims to evaluate the role of Ultrasound and Colour Doppler study for inflammatory scrotal pathologies in patients referred to the Radiodiagnosis Department of Dhiraj General Hospital. An observational study of 15 patients with clinically suspected scrotal pathology was carried out over 6 months. Out of the 15 cases most common pathology was epididymo orchitis (33.3 %), followed by pyocele (26.6%) followed by epididymitis (20 %), scrotal wall inflammation (13.3%) and testicular abscess (6.6%). The present study concludes that the first line of investigation for evaluation of scrotal pathologies should be high-resolution sonography, along with colour doppler flow imaging and power Doppler. Colour Doppler flow imaging complement the gray scale sonography in reaching at a correct diagnosis thereby helping in the management and follow up of the patients.

KEYWORDS

Ultrasound, Color Doppler, Scrotal Pathology

INTRODUCTION-

The testis are most accessible for clinical examination because they are separated from the examining fingers by little more than few mm covering of loose skin and fibro muscular tissue. Many people believe that clinical diagnosis of a scrotal swelling would be straightforward. On the contrary, it is most difficult to diagnose certain testicular pathologies with confidence based on physical examination alone. First report about using diagnostic ultrasound as a modality of investigating scrotal pathologies was published by Miskin and Bain¹ and Murray Miskin, Martin Buckspan and Jerald Bain². After that advances in instrumentation and transducer design have progressed to the point where high frequency ultrasound is the modality of choice in investigating scrotal and testicular pathology. Sonography is also, rapid, non-invasive relatively inexpensive, simple to perform, does not involve irradiation of gonads, easily reproducible and widely available. This study is an attempt to detect the effectiveness of ultrasound and colour Doppler for evaluation of inflammatory scrotal pathology in patients coming to radio diagnosis department of dhiraj hospital, pipariya, Vadodara in India.

AIMS AND OBJECTIVES-

The aim is to evaluate and classify different inflammatory scrotal

pathologies by ultrasound and colour Doppler in patients presenting at dhiraj general hospital.

MATERIALS AND METHODS-

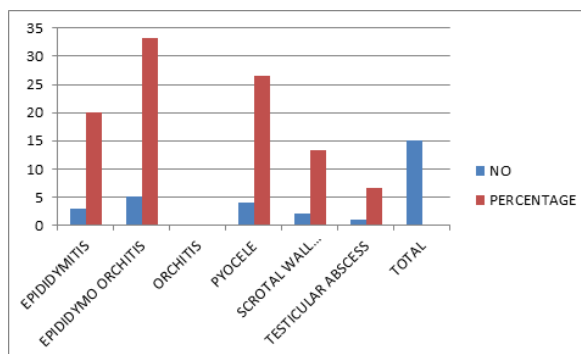
This is an observational non interventional type of study. We used data of patients presented in our radiology department ,from Feb 2019 to August 2019. 15 patients were diagnosed having different inflammatory scrotal pathologies using Logic GE P5 and P9 sonography machines.

DISCUSSION-

TABLE-1: INFLAMMATORY SCROTAL PATHOLOGY DISTRIBUTION (15 CASES)

PATHOLOGY	NO	PERCENTAGE
EPIDIDYMITIS	3	20
EPIDIDYMO ORCHITIS	5	33.3
ORCHITIS	0	0
PYOCLE	4	26.6
SCROTAL WALL INFLAMMATION	2	13.3
TESTICULAR ABSCESS	1	6.6
TOTAL	15	

CHART 1:-



In my study, out of 15 cases, Epididymo orchitis was the most common inflammatory pathology detected, noted in 5 cases (33.3%). Next most frequent inflammatory pathology detected was pyocele noted in 4 cases (26.67%). Other detected inflammatory pathology include epididymitis in 3 cases (20%), scrotal wall inflammation in 2 cases (13.3%) and testicular abscess in 1 case each (6.7%).

A few similar studies were carried out for evaluation of scrotal pathologies as follows, **Horstman, Middleton, and Nelson³, in their study of 45 patients, found acute epididymitis present in 25 cases (56%), acute Epididymo-orchitis in 19 cases (42%), acute orchitis in**

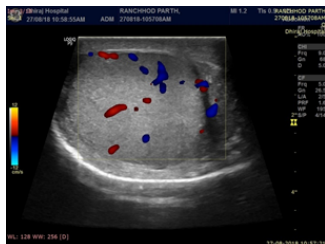
1 case (2%). No case of chronic Epididymo orchitis was reported.

Lerner et al⁴, in their limited series of 5 cases of acute inflammatory diseases of scrotum, found acute epididymitis in 3 patients (60%), acute Epididymo orchitis in 2 patients (40%).

Farriol et al⁵, in their study of 25 cases of acute inflammatory diseases of scrotum using high-resolution grey scale and power Doppler sonographic study, found epididymitis in 11 cases (44%), Epididymo- orchitis in 10 cases (40%), orchitis in 2 cases (8%), funiculitis in 2 cases (8%).

TABLE 2- SONOGRAPHIC FEATURES OF INFLAMMATORY PATOLOGY

Site and features	Epididymitis	Epididymo Orchitis	Pyocele	Scrotal Wall Inflammation	Testicular Abscess
Testes:					
I. Size					
• increased	01	03	01	00	01
• Normal	02	02	03	02	00
• Decreased	00	00	00	00	00
II. Vascularity					
• Increased	01	05	00	00	01
• Decreased	00	00	00	00	00
• Normal	02	00	04	02	00
III. Echotexture					
• Hyperechoic	00	00	00	00	00
• Hypoechoic	00	05	00	00	01
• Heterogenous	00	00	00	00	00
• Normal	03	00	04	02	00
Epididymis					
I Echotexture					
• Hyperechoic	00	03	00	00	00
• Hypoechoic	03	01	00	00	01
• Normal	00	00	04	02	00
II Vascularity					
• Increased	03	04	00	00	01
• Decreased	00	00	00	00	00
• Normal	00	01	04	02	00
Spermatic Cord					
• Normal	01	03	04	02	01
• Thickened	02	02	00	00	00

**RIGHT EPIDIDYMO-ORCHITIS**

A: Transverse image of 28 year / male patient showing enlarged testis with altered echotexture and increased vascularity.



B: Transverse image of 28 year / male patient showing bulky right epididymis with altered echotexture and increased vascularity.

**LEFT PYOCELE**

Transverse image of 55 year / male patient showing thick fluid collection with multiple internal septations in left TV sac.

CONCLUSION-

The first line of investigation for evaluation of scrotal pathologies should be high-resolution sonography, along with colour doppler flow imaging and power Doppler. Colour Doppler flow imaging and power Doppler add useful information and complement the gray scale sonography in reaching at a correct diagnosis thereby helping in the

management and follow up of the patients.

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