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TO STUDY ROLE OF HIGH FREQUENCY ULTRASOUND WITH COLOR DOPPLER IN DIAGNOSIS OF ACUTE SCROTAL PAIN AND ASSESSMENT OF PROGNOSIS AND TREATMENT WITH EARLY DIAGNOSIS

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Abstract

Background & Method: This prospective study of 60 cases of scrotal was conducted in the department of radio diagnosis, Government Medical College, Nagpur Maharashtra, India. Ultrasound of scrotum is performed with patient in recumbent position and the scrotum upheld by towel set between things. A lot of gel is utilized to limit tension on the scrotal skin. High recurrence straight exhibit transducer is utilized for performing study. Each hemiscrotum is examined in longitudinal and cross over planes. Investigation of spermatic line is significant in patients with varicose and suspected testicular twist.

Result: Normal flow is seen in (61.6%), Hypervascularity is seen in (35%) of the cases in the study. Normal Resistive Index was seen in 55% of cases. Low RI was seen in 38.3% of cases, no flow was seen in 6.7% of cases. Most common pathology encountered in the study was hydrocele (55%)

Conclusion: Among the sores hydrocele (42%) was the most continuous determination. Ultrasound separated intra testicular from extra testicular injuries in 100% of the cases, from study it shows that high recurrence ultrasound joined with shading Doppler is the imaging methodology of decision in the assessment of scrotal pathologies. In this way it helps in maintaining a strategic distance from superfluous careful mediations. What's more of Color Doppler gives considerably more data in assessment and portrayal with more analytic precision.

Keywords: ultrasound, doppler, scrotal pain, diagnosis.

Introduction

Epididymitis & epididymo orchitis are most ordinary cause of acute scrotal pain. Gray scale ultrasound revelations of serious epididymitis include hypo echoic or hyper echoic (presumably discretionary to deplete) epididymis. Indirect sign of disturbance like open hydrocele or pyocele with scrotal wall thickening are accessible in most cases[1]. The epididymis is primarily involved in organ on a very basic level drew in with epididymis orchitis, with orchitis making in 20-40% cases.

Concealing & power Doppler ultrasound gives indication of scrotal pollution, hyperemia of epidermises, testis or both. The sensitivity of concealing Doppler ultra sound imaging in perceiving scrotal disturbance is practically 100%[2].

Examination of spectral wave form and resistive index can provide useful information, inflammation of epididymis and testis is associated with decreased vascular resistance. In normal subject the resistive index is rarely less than 0.5, but in more than half of the patients with epididymoorchitis RI is less than 0.5.56Use of peak systolic velocity of 15cm /sec result in diagnostics accuracy of 90% for orchitis and 93% for epididymitis[3]. Reversal of flow during diastole in acute edidymoorchtis is suggestive of venous infraction[4]

Material & Method

This prospective study of 60 cases of scrotal was conducted in the department of radio diagnosis, Government Medical College, Nagpur Maharashtra, India from duration of Sep 2017 to Aug 2018. Ultrasound of scrotum is performed with patient in recumbent position and the scrotum upheld by towel set between things. A lot of gel is utilized to limit tension on the scrotal skin. High recurrence straight exhibit transducer is utilized for performing study. Each hemiscrotum is examined in longitudinal and cross over planes. Investigation of spermatic line is significant in patients with varicose and suspected testicular twist. Slanted longitudinal perspective on testis is gotten to ideally show vessels. Taking all things together cases the asymptomatic side is utilized as a control for correlation.

Inclusion criteria

All patients referred to department of Radio diagnosis with clinical features of scrotal disease for B-mode and Doppler study.

Exclusion criteria:

1. Patient's with previous history of operative or therapeutic procedure on scrotum with exception of vasectomy.

2. Patients presenting with hernia excluded in this study.

Results

Table 1: VASCULARITY ON COLOUR DOPPLER

	NO OF CASES	PERCENTAGE (%)
HYPERVASCULAR	21	35
NORMAL	37	61.6
ABSENT FLOW	02	3.4
TOTAL	60	100

Normal flow is seen in (61.6%), Hypervascularity is seen in (35%) of the cases in the study.

Table 2: Distribution Resistance Index in scrotal pathologies

Resistance Index	No of cases	Percentages (%)
Low resistance	23	38.3
High resistance	04	6.7
Normal	33	55
Total	60	100

Normal Resistive Index was seen in 55% of cases. Low RI was seen in 38.3% of cases, no flow was seen in 6.7% of cases.

Table 3: SPECTRUM OF CASES IN THE STUDY

Diagnosis	No. of cases	Percentage (%)
Hydrocele	33	55
epididymitis	07	11.9
Epididymo-orchitis	06	10
Epididymal cyst	03	05
Orchitis	02	3.3
Varicocele	02	3.3
Teticular Mass	02	3.3
Torsion	01	1.6
Abscesses	01	1.6
Undescended	03	05
Total	60	100

Most common pathology encountered in the study was hydrocele (55%)

Discussion

Epididymo orchitis was seen in 12% of the supreme cases. It is connected with torture and developing. Retrograde spread of urethritis, cystitis, prostatitis or instrumentation has been included as causative factor. It was broke down as a diffusely widened, hypoechoic testis with smooth shape. Concealing stream Doppler sonography showed focal zones of responsive hyperaemia and extended stream both in epididymis and testis. Out of the 14 beginning cases examined 2 wound up being turn on following breadth 24 hr later[5]. This may be a direct result of turn – detorsion. All in all various cases patients responded to hostile to contamination treatment, insisting the assurance. Characteristic precision for diagnosing epididymo orchitis in this assessment was 83.33%.

In our examination six examples of testicular masses were distinguished. Gratham et al[6] communicated that testicular neoplasm address 1-2% of all compromising neoplasm of men and are fifth most essential justification demise in men developed 15-34 years. All of the testicular masses with a lot of portrayed, overwhelmingly hypo echoic zones with relatively few locales of heterogenicity was given investigation of tumor. On concealing doppler sonography tumors showed extended vascularity. Horstman et al [7] found a general association between tumor size and vascularity. In their examination of 28 patients, 20 out of 21 tumors (95%) greater than 1.6 cms, were hyper vascular, where as 6 out of 7 (86%), tumors under 1.6cms were hypo vascular. In this assessment we found that all tumors were more than 1.6cms in size and were hyper vascular as communicated in past study[8].

Hence, high recurrence ultrasound with shading doppler, not just guides in finding and portrayal of injury yet predicts patients treatment and result and maintains a strategic distance from superfluous careful intercession. It has practically 100% demonstrative exactness for Extratesticular and 85% for testicular sores.

Conclusion

Among the sores hydrocele (42%) was the most continuous determination. Ultrasound separated intra testicular from extra testicular injuries in 100% of the cases, from study it shows that high recurrence ultrasound joined with shading Doppler is the imaging methodology of decision in the assessment of scrotal pathologies. In this way it helps in maintaining a strategic distance from superfluous careful mediations. What's more of Color Doppler gives considerably more data in assessment and portrayal with more analytic precision.

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