



EVALUATION OF SPECTRUM OF INGUINO-SCROTAL PATHOLOGIES USING HIGH RESOLUTION ULTRASONOGRAPHY AND COLOUR DOPPLER

Radio-Diagnosis

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KEYWORDS

INTRODUCTION

- Inguino-Scrotal pain and swelling are common presenting complaints in clinical settings. The imaging methods for the assessment of Inguino-scrotal diseases include high frequency grey scale ultrasonography coupled with colour Doppler, MRI, angiography of testicular artery, CT and radionuclide imaging.
- The benefits of ultrasound in the assessment of Inguino-scrotal pathologies include non-invasiveness, ease of reproducibility, quick assessment with instantaneous examination capabilities, accessibility, affordability, and the absence of radiation risk.

Aims and Objective

Aim-

- Evaluation of spectrum of Inguino-scrotal pathologies using high resolution ultrasonography and colour Doppler.

Objectives

- Assess different Inguino-scrotal diseases via ultrasonography.
- Assess the role of high frequency ultrasonography and color Doppler in diagnosis and differentiation of Inguino-scrotal pathologies.
- To determine the pattern and prevalence of Inguino-scrotal diseases, among patients referred for ultrasound at department of Radiodiagnosis at Rajshree medical hospital, Bareilly.

MATERIAL AND METHODS

The study population was comprised of all male patients presenting with clinical features of Inguino-scrotal diseases (Inguinal pain/swelling, Scrotal pain/swelling etc.). All patients referred from various out or inpatient departments or from emergency to the department of Radiodiagnosis for USG Scrotum and/or Inguinal region at Rajshree Medical Research Institute, Bareilly, U.P were taken for study.

All ultrasonography was done using 7 to 12 Megahertz high resolution linear array transducer combined with Colour Doppler on LOGIQ P10 Ultrasound machine. The convex probe of frequency (5-7MHZ) was used wherever lesion was large and more depth was required.

Inclusion Criteria:

- Male patients of all age groups referred to Radiodiagnosis department for USG Inguino-scrotal region with clinical features of Inguino-Scrotal diseases (Inguinal pain/swelling, scrotal pain/swelling).

- All those who consented to the study.

Exclusion Criteria:

- Post-operative cases.
- All those who did not consent to the study.

Equipment: This prospective cross-sectional study was performed in department of Radiodiagnosis, RMRI, Bareilly and high-resolution ultrasound and colour Doppler was performed on LOGIQ P10 ULTRASOUND MACHINE.

Methods

The procedure was explained to the patient and consent was taken.

Baseline demographic data was collected. The patient underwent

Inguino-scrotal ultrasonography along with Color Doppler.

The Inguinal canal was examined by using both gray-scale Ultrasonography and colour Doppler, with the patient in erect position and performing the Valsalva maneuver during real time ultrasound examination, to assess for inguinal hernias, varicoceles, and other pathological conditions. In split screen, consisting of both testis using both grayscale and CDFI ultrasound were taken to compare testicular echogenicity and perfusion from contralateral normal side. Measurement of both testicles were taken successively in three dimensions (length, width and height).

Any scrotal or testicular pathology (focal or diffuse) was subjected to gray-scale ultrasound and supplemental colour doppler imaging, as appropriate. Tail, body, and head of both the epididymis were evaluated in longitudinal and transverse sections. Color Doppler of both the epididymis was also performed. The ultrasonographic pathological findings were interpreted with regard to the position and type of the pathology which included-epididymitis, epididymo-orchitis, funiculitis, hydrocele, varicocele, scrotal wall thickening, intratesticular abscess, scrotal abscess, subcutaneous abscess, epididymal cyst, torsion of testis, testicular atrophy, tumors, inguinal hernia, undescended testis, testicular microlithiasis etc. Follow up of these cases were done and their diagnosis established either by operative findings, histopathological findings, response to medical management or review ultrasound wherever applicable.

RESULTS

Table 1: Distribution Of Age Among The Study Participants (N=80)

S.no.	Age	Frequency	Percentage
1	0-10	5	6.25 %
2	11-20	9	11.25 %
3	21-30	34	42.5 %
4	31-40	8	10 %
5	41-50	10	12.5 %
6	51-60	4	5 %
7	61-70	9	11.25 %
8	>70	1	1.25 %

Table 2: Distribution Of Clinical Spectrum Of Presentation Among The Study Participants (N=80)

S.no	Clinical presentation	Frequency	Percentage
1	Swelling	30	37.5
2	Pain	11	13.75
3	Pain + Swelling	19	23.75
4	Pain + Swelling + Fever	15	18.75
5	Fever + Swelling	1	1.25
6	Absent Testis	3	3.75
7	Swelling + Infertility	1	1.25

Table 3: Distribution Of Type Of Treatment Given To The Study Participants (N=80)

S. No	Treatment	Frequency	Percentage
1	Conservative Treatment	15	18.75
8	Antibiotics	24	30

3	Antibiotic with Surgery	2	2.5
4	Surgery	38	47.5
5	2 different surgery (Varicocele & Hydrocele)	1	1.25
	Total	80	100

Table 4: Distribution Of Final Ultrasound Diagnosis Among The Study Participants (N=80)

S.no	Condition	B/L	Left	Right	Total
1	Epididymitis	3	4	7	14
2	Funiculitis	1	1	3	5
3	Epididymo-Orchitis	1	4	4	9
4	Orchitis	0	1	0	1
5	Epididymal Abscess	0	1	0	1
6	Testicular Abscess	0	1	1	2
7	Scrotal Wall Abscess	0	1	1	2
8	Hydrocele	12	14	13	39
9	Inguinal Hernia	2	6	2	10
10	Varicocele	2	2	0	4
11	Epididymal Cyst	1	0	3	4
12	Testicular Microlithiasis	2	0	0	2
13	Undescended Testis	1	1	0	2
14	Testicular Torsion	0	0	2	2
15	Testicular Atrophy	0	1	0	1
16	Testicular Cyst	0	1	0	1
17	Testicular Infarction	0	0	1	1
18	Testicular Tumour	0	0	1	1
19	Encysted Hydrocele	0	0	1	1
20	Normal	3	-	-	3
	Total				105

DISCUSSION

In our study of scrotal pathologies, we found that the mean age of the participants was 33.58 years, with the majority falling into the 21-30-year age group (42.5%). Hydrocele was the most common condition identified overall and also the most common non-inflammatory pathology, observed in 39 cases (38.2%). The second most common condition identified overall and also the most common inflammatory condition was epididymitis, with a total of 14 cases (13.7%). Inguinal hernia and Epididymo-orchitis were third and fourth most common condition overall with 10 cases (9.8%) and 9 cases (8.8%) respectively.

Funiculitis, varicocele and Epididymal cyst were also prevalent, with 5 (4.8%), 4(3.9%) and 4 (3.9%) cases respectively. Other conditions such as Testicular torsion, Undescended testis, Testicular microlithiasis, Testicular abscess and Scrotal wall abscesses were also noted. Rare conditions included Testicular tumour, Isolated Orchitis, Testicular atrophy, Testicular infarction, Encysted hydrocele of spermatic cord, Epididymal abscess and Testicular cyst each with only one case reported.

CONCLUSION

Our study provides valuable insights into the prevalence and spectrum of scrotal pathologies within the studied population. Epididymitis, hydrocele and varicocele were identified as the most common conditions. The age distribution highlighted a significant prevalence among younger adults, particularly those aged 21-30 years. This would enhance our understanding and improve the management of these conditions, ultimately benefiting patient outcomes

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