

ORIGINAL ARTICLE

Ultrasonographic Study of Scrotal Pathologies in Central Hospital, Warri, NigeriaANIBOR E¹, YOVWIN D G², OGBEMUDIA L U³^{1,3}*Department of Human Anatomy and Cell Biology, Faculty of Basic Medical Sciences, Delta State University, Abraka, Nigeria.*²*Department of Family Medicine, Delta State University, Abraka, Nigeria.**Corresponding author: Ese Anibor, Email: eseovo2000@yahoo.com, Cell: +2348180404966, +2348131617679***ABSTRACT**

This inquiry evaluated the ultrasonographic diagnoses of scrotal pathologies seen at the Central Hospital, Warri in Nigeria. A collective of 135 patients between the ages of 1-70years were considered for this examination. The methodology encompassed a 3 years (2017 to 2019) review of 135 patients enrolled for scrotal ultrasound scan. Data assortment was done between October and December in 2019. Data analysis involved the Statistical Package for the Social Sciences (SPSS), version 23. Results were synchronized with regard to age, ethnic nationalities and the different scrotal pathologies. Chi-square was utilized to analyze the relationship between age and testicular lesions and p-value below 0.05 was termed significant. The preponderance of the patients 28(20.7%) in the sampled populace were in the 31 to 40 years age set. Epididymitis was the least frequent finding and lesions displayed an insignificant age variation ($p > 0.05$). The predominant scrotal pathologies logged are hydrocele and scrotal hernia.

Keywords: Ultrasonography, Scrotal, Pathologies, Warri, Nigeria

INTRODUCTION

Scrotal ultrasonography is extensively used for an abundant array of male lesions, including scrotal tenderness, scrotal tumours, and infertility. Testicular dimension is best determined with ultrasonography and has outstanding significance in evaluating patients with fertility issues (Diamond et al., 2000). Testicular ultrasound assessment is a fundamental imaging methodology to see and analyze scrotal pathologies. The testicles are routinely imaged when a patient complains of testicular pain or scrotal swelling. The image output can display most parts of the male reproductive organs like the scrotal sac, the mediastinum of the testicles, rete testes, epididymis, prostate and testicular blood flow. Conditions like lesions of the scrotum, testicular and spermatic cord torsion, undescended testicles, hydrocele and varicocele are accurately affirmed with ultrasound (Miskin et al., 1977). When imaging the male gonads different lesions display unique acoustic shadows that are pathognomic of lesions like hydrocele, varicocele, torsion of the testis and solid testicular masses. This unambiguous demonstration of various pathologies of the testicles and scrotum affirm the use of ultrasound as an imaging modality for diagnosis (Dewbury et al., 1993).

This inquiry evaluated the ultrasonographic diagnoses of scrotal pathologies seen at the Central Hospital, Warri in Nigeria. Literature review disclosed dearth of published data on ultrasonographic scrutiny of scrotal pathologies in Central Hospital, Warri, hence the need for this research. The outcome of this inquiry is significant to radiologists, oncologists, urologists and surgeons.

MATERIALS AND METHODS

This is a retrospective study which encompassed the utilization of clinical records of patients enrolled for scrotal ultrasound scan in the Central Hospital, Warri. Ethical

leeway was sought from the Ethics and Research Panel of Anatomy Department at the Delta State University, Abraka. Moral leeway was also gotten from the Ethics Committee of the Central Hospital in Warri, Delta State. An aggregate of 135 patients between the ages of 1-70years were utilized for this examination. This inquiry is precisely a 3 years (2016 to 2019) retrospective review of 135 patients enrolled for scrotal ultrasound scan. Inclusion criteria embraced patients enrolled for scrotal ultrasonography from 2016 to 2019 with such patients assessed for scrotal pathologies. Exclusion criteria involved patients underneath 1year and patients above 70years old.

Data on scrotal ultrasound examination for a time of 3years was gathered from the records division in the Central Hospital, Warri. Each subject's age, ethnic nationality and scrotal sonographic findings were recorded on an information sheet. Data assortment was done between the months of October and December in 2019. Data analysis was done with SPSS, version 23 and results were displayed with regard to age, ethnic nationality and the testicular problems diagnosed. Chi-square was utilized to analyze the relationship between age and sort of testicular issue and p-value under 0.05 was termed as significant.

RESULTS

Table 1: Age distribution of the subjects investigated

Age (years)	Frequency (percentage)
1-10	8(5.9%)
11-20	19(14.1%)
21-30	15(11.1%)
31-40	28(20.7%)
41-50	24(17.8%)
51-60	26(19.3%)
61-70	15(11.1%)
Total	135(100%)

Table 2: Association between age and diagnosis pattern of scrotal disorders Diagnosis

Hydrocele %	Varicocele %	Orchitis %	Spermatocele %	Hernia %	Un. Testes %	Normal %	Epididymitis %	Mal. Testes %	Total %	Age %
1-10	2(1.5)	1(0.7)	1(0.8)	1(0.7)	1(0.7)	0(0)	0(0)	0(0)	2(1.5)	8(6)
11-20	9(6.7)	1(0.7)	0(0)	0(0)	3(2.2)	0(0)	4(3)	1(0.7)	1(0.7)	19(17.1)
21-30	2(1.5)	2(1.5)	1(0.8)	2(1.5)	1(0.7)	3(2.2)	3(2.2)	1(0.7)	0(0)	15(11.1)
31-40	6(4.4)	3(2.2)	2(1.5)	1(0.7)	6(4.4)	2(1.5)	6(4.5)	0(0)	2(1.5)	28(20.7)
41-50	10(7.4)	1(0.7)	1(0.8)	1(0.7)	5(3.7)	1(0.8)	3(2.2)	1(0.7)	1(0.7)	24(17.8)
51-60	10(7.4)	2(2.2)	3(2.3)	1(0.7)	3(2.2)	1(0.8)	3(2.2)	2(1.5)	1(0.7)	26(19.3)
61-70	6(4.4)	1(0.7)	0(0)	3(2.2)	1(0.7)	0(0)	3(2.2)	1(0.7)	0(0)	15(11.1)
T =	45(33.3)	11(8.2)	8(6)	9(6.7)	20(14.8)	7(5.2)	22(16.3)	6(4.4)	7(5.2)	135(100)

Table 3: Relationship between age and diagnosis as well as diagnosis and ethnicity

Pairs	N	Mean	SD	X	df	P-Value
Age	38.6	19.5	43	48	0.64	
Diagnosis	135	Years	Years			
Ethnicity	56	64	0.75			
Diagnosis						

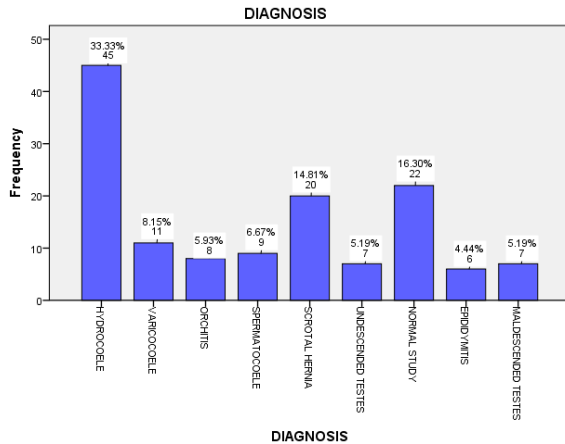


Figure 1: Scrotal ultrasonographic findings among the study population

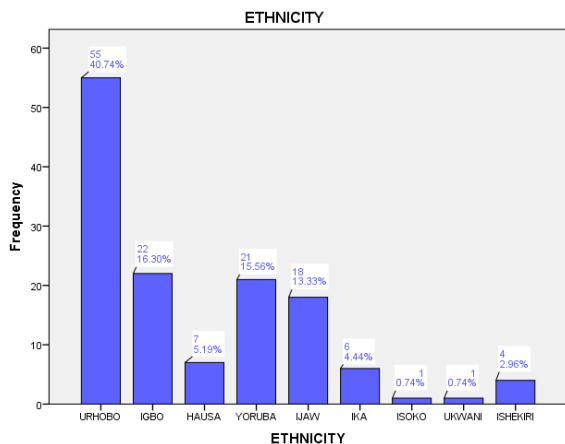


Figure 2: The ethnicity of the study populace

Table 1 disclosed an aggregate of 135 cases which were assessed in this examination. The age scope of the patients was 1 to 70 years. The vast majority of the patients 28(20.7%) were inside the 31 to 40 years age gathering.

From figure 1, the most recurrent ultrasonographic finding among the studied populace was hydrocele, seen in 45 cases (33.3%). Very few cases of epididymitis 6 (4.4%) were seen among the scrutinized populace.

Regarding the ethnic sets in the examined masses as disclosed in figure 2, Urhobo (40.7%) was the most preponderant ethnic faction. The Isoko and Ukwani ethnic blocs were rarely seen as specified by the percentage occurrence of 0.7%.

As expressed in Table 2, the age faction 1-10years had hydrocele [2(1.5%)] and maldescended testicles [2(1.5%)] as the main pathologies scrutinized. For the age clique 11-20years, hydrocele was the most common pathology with regularity of 9(6.7%). For the age interval 21-30years, undescended testis was the most common pathology with a frequency of 3(2.2%). At the 41-50years age category, hydrocele affected 10(7.4%) as the most common pathology.

The 51-60years age bracket had 10(7.4%) patients with hydrocele as the commonest lesion. Additionally, the age section 61-70years was affected by hydrocele 6(4.4%) as the most rampant lesion.

From table 3, it is obvious that the mean for the age was 38.6 ± 19.5years. There was no remarkable relationship between age and diagnosis (p >0.05). There was likewise no considerable association between ethnic set and diagnosis (p >0.05).

DISCUSSION

This is a retrospective study that entailed 135 patients within age cluster of 1-70years, and evaluated the ultrasonographic diagnoses of scrotal pathologies seen at the Central Hospital, Warri in Nigeria. One of the targets of this examination was to ascertain if there was any correlation between age and scrotal pathologies seen at the Central Hospital in Warri.

The mean age of the patients was 38.6 ± 19.5 years and the vast majority of the patients (54%) were in their fourth to fifth decades of life. Researchers did a ten year appraisal of ultrasonographic examinations of scrotal diseases in Ibadan, South Western Nigeria and observed that majority of patients (57.1%) were in the third and fourth decade (Ekwutosi et al., 2018). The explanation for this similarity could be that men in this age set are in the dynamic conceptive age and are bound to be examined for fruitlessness/barrenness related cases.

This inquiry disclosed that hydrocele is the predominant (33.33%) scrotal pathology seen on ultrasonographic scrutiny of cases seen at the Central Hospital in Warri, Nigeria. Kolade et al., (2019) reported

that varicocele is the most rampant finding with a frequency rate of 50.6% in the sub-fertile males contrasted with 48.3% in fertile males; and this differentiation was remarkable ($P = 0.000$). Kolade et al., (2019) reported that hydrocele is the second most common scrotal pathology in Abuja, Nigeria. Ugboma and Aburoma (2011) disclosed a high incidence of testicular cancer. David et al., (2015) disclosed 16% of ultrasonic scrotal benign lesions. Narra et al., (2015) observed in India that perceived inflammatory lesions are the main causes of scrotal pathologies in their populace.

In this investigation, the most widely seen scrotal lesions with ultrasonographic scrutiny among the examined populace were hydrocele (33.3%), followed by scrotal hernia (14.8%), which were similar to the findings documented by Aubaid et al. (2014). Hydrocele was widespread in the second decade and this was in consonance to the discovery of Aubaid et al., (2014). The similarity seen in these two studies unlike the finding of Kolade et al, might be due to age specific bracket of the later which focused mainly on males in the reproductive age group.

This inquiry divulged that the medical indications for scrotal/testicular ultrasonographic scrutiny are: hydrocele (33.33%), scrotal hernia (14.81%), varicocele (8.15%), spermatocele (6.67%), epididymitis (4.44%), orchitis (5.93%) and undescended testis (5.19%). Ekwutosi et al., (2018) disclosed that the leading clinical indications for scrotal/testicular ultrasound assessment are: permutation of infertility and varicocele (21.9%), varicocele (18.3%), infertility (17.7%), hydrocele (14.0%) and scrotal swelling (10.6%).

The distinctness and similarities of the researches appraised are probably because of distinctions in age,

geographic area of the patients, medical characteristics, and study methodologies.

CONCLUSION

The predominant scrotal pathologies on scrotal ultrasound examination of the considered populace are hydrocele and scrotal hernia. The relationship between age and testicular pathologies diagnosed is not remarkable.

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