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ORIGINAL ARTICLE

Uterine Myoma: an Ultrasonographic Study of Patterns at the Central Hospital in Warri, Delta State, Nigeria

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ABSTRACT

This analysis considered the sonographic patterns of uterine myoma seen at the Central Hospital in Warri, Delta State, Nigeria. Ultrasonographic records of the uteri of 312 women seen from December 2017 to January 2021 were retrieved from the Central Hospital in Warri, Nigeria. Information on the leiomyoma size, weight, occurrence site, types and number of nodules were fetched from available ultrasonographic reports. Ethical approval was obtained from the Research/ Ethical Committee of Human Anatomy Department at the Delta State University, Abraka, and the Warri Central Hospital. Data was entered into Statistical Package for the Social Sciences (version 23). Results were presented in mean and simple percentage of occurrences of sampled parameters. The chi-square test was used to obtain association between categorical variables, while setting p-value < 0.05 as statistically significant. A total of 312 cases of women with leiomyoma were detailed. The 45-50 years age group had the highest frequency of 52 (16.7%). Regarding the location of the leiomyoma in the different parts of the uterus, the anterior corpus was the commonest site of occurrence of the leiyomyoma accounting for a frequency of 80 (25.6 %) while the fundus had the least frequency of 53 (17%). Based on volume and number of observed nodules, about 160 (51.3%) of assessed leiomyoma lesions were > 200cm3, whereas 152 (48.7%) were < 200cm3. Also, 1-5 nodules were observed in 117 cases, accounting for about 37.5% of the leiomyoma lesions. Conclusively, this study has shown that an insignificant association exists between patient age and the weight, size, type and number of nodules of leiyomyoma

Keywords: Leiomyoma, uterine, myoma, ultrasonography.

INTRODUCTION

Leiomyoma is the commonest benign pelvic tumour that is responsible for a significant proportion of morbidly and infertility in women. Uterine leiomyoma also known as myoma, fibromyoma, uterine fibroma or fibroid is a monoclonal tumour that arises from the myometrium (smooth muscle of the uterus) [1,2].

Uterine fibromyoma is the most prevalent gynaecological tumour that affects 8 in 100 women and 20 to 40% of women of reproductive age [3]. The prevalence of fibroids rises with age; by age of 50 years, up to 65% of females have uterine fibroids [4]. Race has also been shown to be a critical epidemiological factor for uterine fibromyoma, conspicuously apparent in females of African origin, who are more symptomatic than white women[5,6]. The relationship with race has been extensively reported with findings that show that myomas are estimated to be 3 to 9 times more frequent in the Negroes than in the Caucasian race[7,8]. Uterine fibroid is also commoner in the nulliparous and relatively infertile women[9]. The lesions are mostly symptomless, especially when small and even when of considerable size [10]. Often, the diagnosis of uterine leiomyoma is made incidentally during evaluation for other pathologies[11]. About 30% of affected women may present with symptoms [12] that range from abdominal mass, abdominal discomfort, abnormal uterine bleeding, infertility and pressure symptoms[9,13].

In clinical practice, ultrasonography due to its high sensitivity and specificity, remains the first line diagnostic investigation for suspected cases of uterine myoma. Pelvic ultrasonography which can be performed via the transvaginal or trans-abdominal route, both with their beneficial and restrictive roles; however, transvaginal sonography is preferred in most pelvic pathologies because of its improved resolution [14]. One important limitation of this imaging modality is that it is highly operator and machine dependent so efficiency often depends on the operator's know-how and abilities [15].

Myomas are characteristically hypoechoic and may be intramural, subserosal, submucosal or pedunculated in location. Ultrasonography apart from evaluating the sonographic appearances of the masses, is also helpful in documenting the size, position and number of the masses or nodules.

There are reports of huge increase in the rate of fibromyoma[16-18]. However, literatures exposed rarity of researches conducted in Warri, Nigeria on the incidences of fibromyoma among women. This heightens the necessity for a scrutiny like this; to evaluate the ultrasonographic appearance of uterine fibromyoma, using the Warri Central Hospital as a case study. This analysis thus scrutinized the sonographic patterns of uterine myomas seen at the Central Hospital in Warri, Nigeria.

MATERIAL & METHOD

This cross sectional study retrospectively reviewed the records of females with clinically diagnosed uterine myoma that presented to the Central Hospital, Warri, Nigeria from December 2017 to January 2021. The Central Hospital Warri is situated in the Warri-Sapele Road (Kilometer 1), Warri South Local Government Area in Delta State, Nigeria.

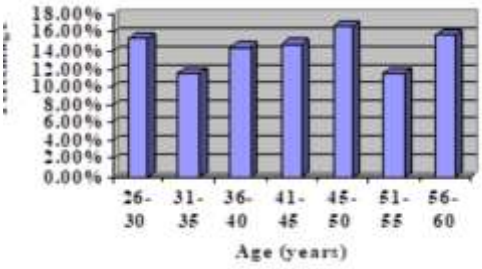
Ethical clearance was obtained before the commencement of the study from the Research/Ethics

Committee of Human Anatomy Department in the Delta State University, Abraka. Permission to access patients' records was also gotten from the Management of the Central Hospital, Warri. The case notes of the adult females who visited the hospital during the period under review were retrieved from the medical records department of the hospital and purposive sampling technique was adopted. Only records of confirmed cases of uterine fibromyoma that were properly documented were recruited into the study. Information of the patients that were collated and entered into the data spread sheet were age, anatomical distribution and dimensions of uterine myoma.

Data obtained was subjected to analysis using the Statistical Package for Social Sciences (SPSS version 23). The results were presented in frequency tables and chi square test was used to test for association between the categorical variables, then a p value lesser than 0.05 was considered to be significant.

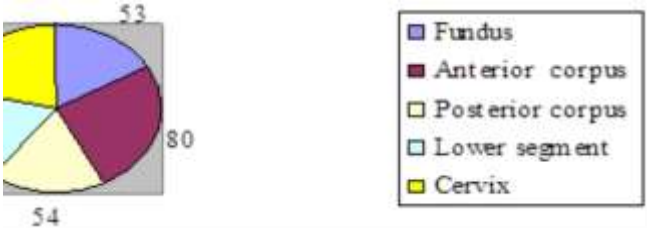
RESULTS

Figure 1: Distribution of sample by age



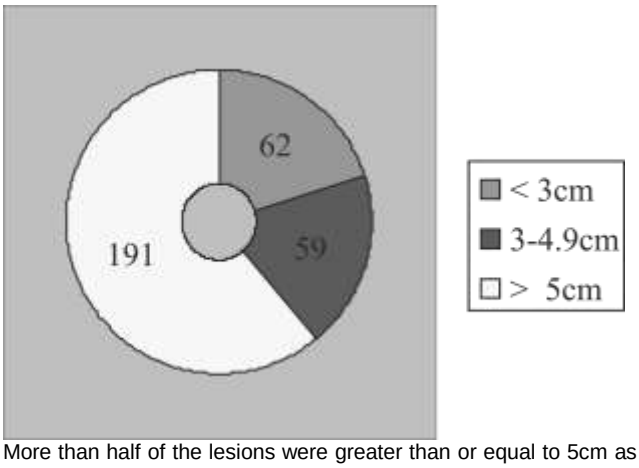
A good number of the research subjects were within the 45-50years age class as represented in figure 1.

Figure 2: Leiomyoma location in considered tumours



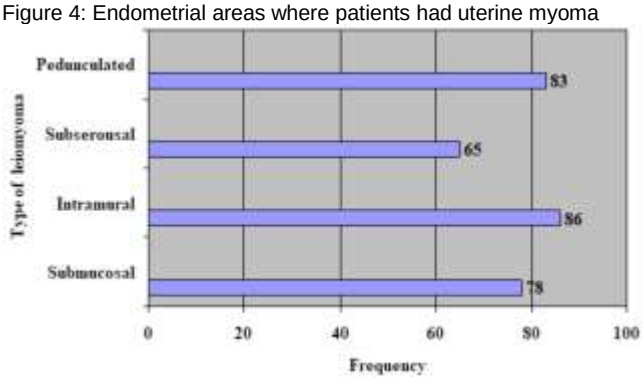
As regards the different uterine regions where leiomyoma occurred, the anterior corpus had the highest frequency of recurrence as clarified in figure 2.

Figure 3: Leiomyoma size in evaluated lesions



More than half of the lesions were greater than or equal to 5cm as typified in figure 3.

Figure 4: Endometrial areas where patients had uterine myoma



The intramural sort of uterine myoma was the most pervasive as exemplified in figure 4.

Figure 5: Leiomyoma size in assessed tumours

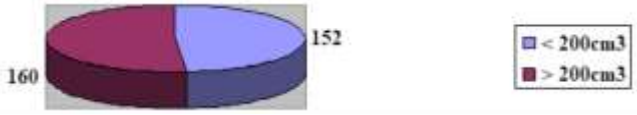
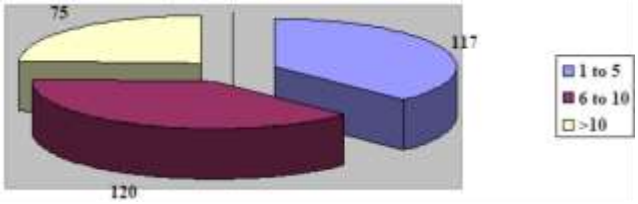


Figure 5 emphasized that more than half of the lesions had volume that were exactly or more than 200cm3.

Figure 6: Number of leiomyoma nodules



Totality of 6-10 leiomyoma nodules were sighted in majority of the lesions as stipulated in figure 6.

Table 7: Chi-square test of association between age and leiomyoma location

Age groups (years)	Leiomyoma location							
	Fundus	Anterior corpus	Posterior corpus	Lower segment	Cervix	Chi-square	df	p-value
26-30	9 (2.9)	17 (5.4)	6 (1.9)	10 (3.2)	6 (1.9)	26.895	24	0.309
31-35	10 (3.2)	7 (2.2)	7 (2.2)	7 (2.2)	5 (1.6)			
36-40	6 (1.9))	9 (2.9)	6 (1.9)	11 (3.5)	13 (4.2)			
41-45	13 (4.2)	9 (2.9)	10 (3.2)	3 (1.0)	11 (3.5)			
45-50	5 (1.6)	14 (4.5)	10 (3.2)	9 (2.9)	14 (4.5)			

51-55	2 (0.6)	11 (3.5)	6 (1.9)	7 (2.2)	10 (3.2)			
56-60	8 (2.6)	13 (4.2)	9 (2.9)	10 (3.2)	9 (2.9)			
Total	53 (17.0)	80 (25.6)	54 (17.3)	57 (18.3)	68 (21.8)			

Table 7 specified that chi-square test of association between age and leiomyoma location was not remarkable (p>0.05).

Table 8: Chi-square test of association between age and leiomyoma diameter

Age groups (years)	Leiomyoma diameter					
	< 3cm	3-4.9cm	> 5cm	Chi-square	df	p-value
26-30	9 (2.9)	9 (2.9)	30 (9.6)	16.742	12	0.160
31-35	9 (2.9)	4 (1.3)	23 (7.4)			
36-40	8 (2.6)	7 (2.2)	30 (9.6)			
41-45	5 (1.6)	8 (2.6)	33 (10.6)			
45-50	11 (3.5)	12 (3.8)	29 (9.3)			
51-55	3 (1.0)	9 (2.9)	24 (7.7)			
56-60	17 (5.4)	10 (3.2)	22 (7.1)			
Total	62 (19.9)	59 (18.9)	191 (61.2)			

Table 8 indicated that chi-square test of association between age and leiomyoma diameter was not notable (p>0.05).

Table 9: Chi-square test of association between age and leiomyoma types

Age groups (years)	Leiomyoma types						
	Submucosal	Intramural	Subserousal	Pedunculated	Chi-square	df	p-value
26-30	13 (4.2)	16 (5.1)	9 (2.9)	10 (3.2)	22.823	18	0.197
31-35	8 (2.6)	11 (3.5)	6 (1.9)	11 (3.5)			
36-40	9 (2.9)	16 (5.1)	9 (2.9)	11 (3.5)			
41-45	20 (6.4)	7 (2.2)	6 (1.9)	13 (4.2)			
45-50	11 (3.5)	19 (6.1)	10 (3.2)	12 (3.8)			
51-55	7 (2.2)	7 (2.2)	12 (3.8)	10 (3.2)			
56-60	10 (3.2)	10 (3.2)	13 (4.2)	16 (5.1)			
Total	78 (25.0)	86 (27.6)	65 (20.8)	83 (26.6)			

Table 9 pointed out that chi-square test of association between age and leiomyoma type was not imperative (p>0.05).

Table 10: Chi-square test of association between age and leiomyoma volume

Age groups (years)	Leiomyoma size				
	< 200cm3	> 200cm3	Chi-square	df	p-value
26-30	23 (7.4)	25 (8.0)	4.752	6	0.576
31-35	19 (6.1)	17 (5.4)			
36-40	21 (6.7)	24 (7.7)			
41-45	20 (6.4)	26 (8.3)			
45-50	24 (7.7)	28 (9.0)			
51-55	15 (4.8)	2 (6.7)			
56-60	30 (9.6)	19 (6.1)			
Total	152 (48.7)	160 (51.3)			

Chi-square test of association between age and leiomyoma weight was not vital (p>0.05) as exposed in table 10.

Table 11: Chi-square test of association between age and number of leiomyoma nodules

Age groups (years)	Number of leiomyoma nodules					
	1-5	6-10	>10	Chi-square	df	p-value
26-30	15 (4.8)	21 (6.7)	12 (3.8)	8.851	12	0.716
31-35	13 (4.2)	13 (4.2)	10 (3.2)			
36-40	18 (5.8)	18 (5.8)	9 (2.9)			
41-45	14 (4.5)	18 (5.8)	14 (4.5)			
45-50	19 (6.1)	22 (7.1)	11 (3.5)			
51-55	14 (4.5)	16 (5.1)	6 (1.9)			
56-60	24 (7.7)	12 (3.8)	13 (4.2)			
Total	117 (37.5)	120 (38.5)	75 (24.0)			

Chi-square test of the relationship concerning age and number of leiomyoma nodules is trifling (p>0.05) as described in table 11.

DISCUSSION

The current survey revealed that women of 45-50 years experienced an apparently higher manifestation of uterine myoma with an average of 52 (16.7%). Lawal et al., (2019) noted that the largest frequency of leiomyoma (29.8%) was seen in the 36-40 years age set [18]. Anibor (2020) established that cases of uterine myoma were numerous in women of the 30 to 40 years age class [19].

Upshots of the present scrutiny exposed that of the different uterine areas where leiomyoma appeared in the assessed sonographic records, about 20.8% (65/312) were subserous fibroids, 25.0% (78/312) submucous, and 26.6% (83/312) pedunculated, while 27.6% (86/312) were intramural. Ultrasound analytic studies done by Ukwenya et al., (2017) at Sckye Hospitals in Akure, Nigeria documented that in various endometrial areas, patients had

uterine myoma, with about 7.87% (13/176) subserous fibroids, 5.11% (9/176) submucous, and 4.55% (8/176) pedunculated, while 74.43% (131/176) were intramural[16].

On the basis of volume and number of observed nodules, outcomes revealed that of the total assessed cases (312), about 160 of them had leiomyoma volume > 200cm3, with an occurrence rate of 51.3%. Whereas, 152 (48.7%) of such lesions were < 200cm3. Similarly, 1-5 nodules were observed in approximately 117 cases, accounting for about 37.5% of the number of leiomyoma nodule distribution. Albeit, 6-10 nodules, and > 10 nodules were observed for 120 (38.5%) and 75 (24%) respectively. Abeler et al., (2009) however reported a similar result in the mass of their assessed cases, relative to the current study. They investigated Norwegian women from 1970 to 2000[20].

The outcome of this scrutiny is an insignificant association between age and leiomyoma volume, diameter, types and number of nodules. This analysis is in accord with that carried out by Yakasai et al., (2013) who specified a non-significant relationship between age and manifestation of uterine myoma[21]. This inquiry did not concur with that of Babarinsa et al., (1998) who divulged a statistically remarkable relationship between age and expression of uterine myoma[22].

The various inquisitions dialogued above verified inimitability owed to impacts like parity, cultural ties, time of life, and methodology. The drawback that prevailed on this inquiry pertains to the archives utilized as specific information such as parity were not retrieved.

CONCLUSION

The deduction from this enquiry is the insignificant association noted between age and leiomyoma volume, diameter, types and number of nodules in the considered populace.

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