



## ANATOMICAL LOCATIONS OF UTERINE FIBROIDS IN SUDANESE WOMEN

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### ABSTRACT

Uterine fibroids are the commonest uterine neoplasms, they are benign tumors of smooth muscle origin. The study was done to look for the anatomical locations of uterine fibroids and their incidence in Sudanese women at Omdurman Maternity Hospital between 1st July 2014 to 5th October 2015. Their sociodemographic and ultrasound data were collected using a prepared questionnaire. The study included 138 confirmed cases of uterine fibroids out of 2968 investigated cases representing incidence rate of 4.6%. The highest incidence was found in the age group 36-40 years. Most dominant anatomical locations of uterine fibroids were intramural as a single mass (34.78%), followed by the intramural-subserosal in multiple masses (20.29%). The anatomical positions of uterine fibroids, posterior position was seen in (27.5%) which was the most dominant in single uterine fibroid mass, followed by the anterior-posterior position in multiple uterine one (18.1%). Intramural anatomical locations in single mass are the commonest uterine fibroids types which affect the Sudanese women.

**Key words:** Anatomical locations; Uterine fibroid and leiomyomas

### INTRODUCTION

Uterine fibroids are monoclonal tumors. However, the factors involved in their initiation and growth remain poorly understood (Rein , 2000). The cause of fibroids is unknown, but many factors are thought to be involved including sex, steroid hormones and growth factors (Anne , 2005).

Fibroids affect the reproductive health and well-being of approximately 25% of premenopausal women. In the United States annually the fibroids account for 33 percent of all hysterectomies (200,000–300,000) (Renée et al., 2005). Uterine fibroid is a common concern in women at fertile age causing recurrent bleeding and pain symptoms which can have a negative impact on different aspects in women's life (Anne et al., 2012).

According to a 2010 World Health Organization report, uterine fibroids affect between 20 – 25% of women, and close to 235 million women which represent 6.6% of global women

population (Atombosoba et al., 2015). The prevalence of leiomyomas increased with age, being 3.3% in the 25-32 years age group and 7.8% in the 33-40 age group (Borgfeldt et al., 2000). Uterine leiomyoma constituted 117 of the 1094 gynecological admissions at Nnamdi Azikiwe University Teaching Hospital, it represents (10.7%) , majority of the patients were nulliparous (76.7%) and 51.5% were married ( Ezeama et al ., 2012).

Uterine fibroids are anatomically classified by their locations in the uterus as follows, subserosal leiomyomas are located just under the uterine serosa and may be pedunculated. Intramural leiomyomas are found within the myometrium but may distort the uterine cavity or cause an irregular external uterine contour. Submucosal leiomyomas are located just under the uterine mucosa (endometrium) may be either pedunculated or non-pedunculated (Medikare et al., 2011).

(Pramod & Roshni, 2013) described that fibroids are often multiple and are single in only 2% of cases, the common symptoms are abnormal vaginal bleeding and pain. Submucosal fibroids are the least common (5%) and are commonly symptomatic. 8% of fibroids found in the cervix.

The size, number and location of fibroids undoubtedly determine their clinical behaviour, but researcher has yet to correlate these

parameters with clinical presentation of the fibroids (Gupta et al., 2008).

The incidence of uterine fibroids was (10.7%) among the Sudanese married women (8% single fibroids and 2.7% multiple fibroids) in study subjects. Subserous were fibroid is the commonest type of uterine fibroids (44%) and detected in age group of 41-48 years. For ethnic consideration, females from center of Sudan show the highest incidence of fibroids (60%) (Mahmoud et al., 2014).

## MATERIALS AND METHODS

Hospital based prospective study to look for anatomical locations of uterine fibroids in Sudanese women by using transabdominal ultrasound. This study was carried on all patients (women) attending the gynecology department of Omdurman Maternity Hospital. Those in whom uterine fibroids are found were selected for the study. Three instruments of diagnosis were used for data collection; The patients were subjected to an interview through prepared questionnaire, the patients were examined in the outpatient clinic Department of Gynecology and finally transabdominal ultrasound images were obtained at the department of ultrasound to diagnose the locations, positions and numbers

of the uterine fibroids. Ultrasound machine used for the study was power vision 6000 Toshiba made in Japan, with probe (3.5 MHz). The data was analyzed by Statistical Package for Social Sciences (SPSS) software version 16, descriptive statistics was used the data were coded and transferred to a computer. The results presented in shape of tables and figures. All patients were informed about the research objectives and procedures during the study period. Patients who accept to participate in the study after verbal and written consent was included. Approval for research was obtained from National Ribat University Ethics Committee.

## RESULTS

138 out of 2968 gynaecological cases, selected at Omdurman Maternity Hospital, were confirmed to have uterine fibroid by ultrasound screening, thus the incidence was (4.6%) in this study. Table (1) shows the study age groups, the age group 36-40 year represents a high frequency (24.64%). Most of patient ages was distributed into a group from 26-45 years of study population it was give indication that fibroids are not common in young ages and decrease with old and young ages. Classification of fibroids according to the symptoms was as follow; symptomatic uterine fibroids represents 104 (75.36%) and it is the dominant compared to asymptomatic which scores 34 (24.64 %) as shown in table (2). Frequency distribution of patients according to

the number of uterine fibroids mass, were single 75(54.3%) and multiple 63 (45.7%) as demonstrated in table (3).

Table (4) Fig (1) shows the most dominant anatomical locations of uterine fibroids in which intramural as single uterine mass form (34.78%), followed by subserosal (14.49%). The intramural + subserosal in multiple mass (20.29%), followed by intramural + intramural (13.77%). Table (5) Fig (2) viewed that the posterior position of fibroids was the most dominant in single fibroids mass 38 (27.5%), followed by anterior 22 (15.94%). While the anterior + posterior position in multiple fibroid was the dominant 25 (18.1%), followed by posterior + fundal 9 (6.52%).

Table (1): Frequency distribution of patients according to the age:

Age group (years)	Frequency	%
20 – 25	9	6.52
26 – 30	28	20.29
31 – 35	32	23.19
36 – 40	34	24.64
41 – 45	28	20.29
46 – 50	6	4.35
51 – 55	1	0.72
Total	138	100
Range	20-55	
Mean±SD	35.68±6.898	

Table (2): Frequency distribution of patients according to the classification of uterine fibroids symptoms:

Classification	Frequency	%
Asymptomatic	34	24.64
Symptomatic	104	75.36
Total	138	100

Table (3): Frequency distribution of patients according to the number of uterine fibroids mass:

Mass	Frequency	%
Single	75	54.3
Multiple	63	45.7
Total	138	100

Table (4): Frequency distribution of patients according to the uterine fibroids anatomical locations :

Types	Frequency	%
Intramural	48	34.78
Subserosal	20	14.49
Submucosal	4	2.90
Peduncled Subserosal	3	2.17
Intramural+Intramural	19	13.77
Subserosal+Subserosal	6	4.35
Intramural+Subserosal	28	20.29
Subserosal+Submucosal	3	2.17
Intramural+Peduncled Subserosal	2	1.45

Intramural+Submucosal	5	3.62
Total	138	100

Table (5): Frequency distribution uterine fibroids according to their positions in the uterine wall:

Position	Frequency	%
Anterior	22	15.94
Posterior	38	27.54
Fundal	14	10.14
Cervical	1	0.72
Anterior+Posterior	25	18.12
Anterior+Fundal	6	4.32
Posterior+Posterior	7	5.52
Posterior+Fundal	9	6.52
Anterior+Posterior+Fundal	5	3.62
Fundal+Fundal	4	2.90
Anterior+Cervical	1	0.72
Posterior+Cervical	1	0.72
Anterior+Posterior+Fundal+Cervical	1	0.72
Anterior+Anterior	4	2.92
Total	138	100

Figure 1: viewed the frequency the distribution of patients according to the uterine fibroids anatomical locations

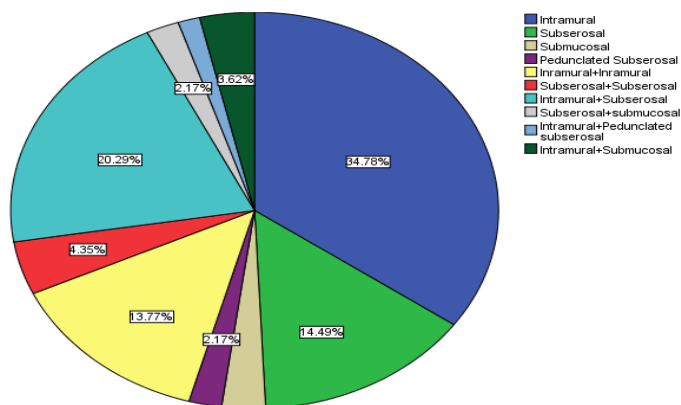
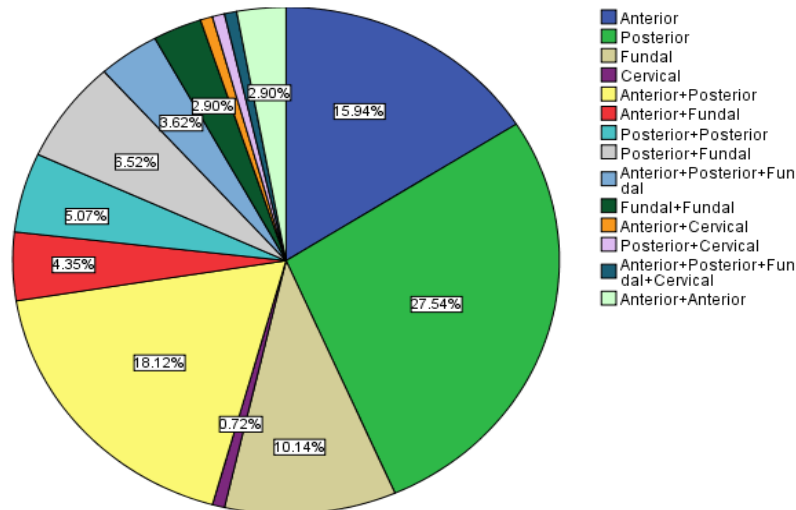


Figure 2: viewed the frequency the distribution of patients according to the uterine fibroids Position.



### DISCUSSION

The prevalence of uterine fibroids varies with age, being increased in the late reproductive period. The reported rate of the disease varies due to differences in study design (Rousseau & Gottlieb, 2004). This incidence (4.6%) in this study was low compared to other researcher findings in Sudan (Mahmoud et al., 2014) who found an incidence of 10.7% in married Sudanese women of which 44% was detected in age group of (41-48) years. The majority of the present study subjects with uterine fibroids found in the ages between (26-45) years, the highest incidence in age group between (36-40) years. Moreover, the study showed that the incidence increases steadily and then decreases over 50 years (table 1).

Anatomical locations of uterine fibroids in the present sample as single locations were as follows; intramural (34.78%), subserosal (14.49%), submucosal (2.90%) and pedunculated subserosal (2.17%) (table 1).

This study revealed intramural and subserosal were dominant locations which finding agrees with Medikare et al., 2011 who mentioned that subserosal and intramural anatomical locations represent the majority (95%) of all uterine fibroids. Subserosal myomas have the highest incidence (54%) (Nargis et al., 2011). This study disagrees with that intramural locations come first (34.78%), subserosal (14.49%) second as single mass. Intramural single anatomical location of uterine fibroids represents commonest uterine fibroids types in Sudanese women as mentioned in table (1). This differs from other comparable studies

which showed subserosal uterine fibroid to be commonest type (Mahmoud et al., 2014).

A study done in Sudan by Sid Ahmed in 2012 (50) demonstrate that (40%) of fibroids were found in the fundal region, 40% in the body, while only 20% were found in the cervix (Sid Ahmed, 2012). The positions of fibroids in this study differ from that the posterior position takes high percentage, fundal position (10.14%) and cervical only (0.72%). Pramod & Roshni in 2013 reported that 8% of fibroids occur in the cervix the current study result disagrees with that (0.72%) were cervical fibroids.

In this study 45.65% of the study population had multiple fibroids, whereas (54.35%) had a single one. The majority of fibroids are multiple, whereas 2% are single (Pramod & Roshni, 2013). The reason for high percent of single fibroid in the current study is not known but these findings agree with Mahmoud et al., 2014 who mentioned that 8% were single fibroids and only 2.7% were multiple from the total subjects' percentage in their study which was done in Sudan.

The current study result indicates increases of symptomatic fibroids (75.36%) rate in contrast to another study done by Edwards et al., 2007 which showed that fifty percent of patients with uterine fibroids are symptomatic.

In conclusion, the intramural anatomical locations in single mass are the commonest uterine fibroids types which affect the

Sudanese women. The most dominant anatomical locations of uterine fibroids are intramural as single mass (34.78%), followed by the intramural +subserosal as multiple mass (20.29%). Regarding the fibroids positions on the uterine wall, the posterior position of fibroids (27.5%) was most dominant as single fibroid mass, followed by the anterior + posterior position (18.1%) as multiple fibroid mass. Uterine fibroids are common benign tumor of the uterus affecting (4.6%) of the

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study population. Symptomatic uterine fibroids represent (75.36%) of study population and cause a lot of complications, so clinical attentions should be raised, also an early investigation will be a protective factor. Further studies are needed to study the anatomical locations of uterine fibroids with other methods of assessments like Magnetic Resonance Imaging (MRI).

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