

INCIDENCE AND AGE DISTRIBUTION OF FIBROIDS AT FEDERAL MEDICAL CENTRE OWERRI, NIGERIA

EMMANUEL A. ODUMERU Pgd Med. Imaging RDMS, RDCS (Canada)
Assistant Chief Medical Radiographer
, Rad-logydepartment Federal Medical Centre Orlu Road, Owerri Nigeria.
G.S.M. No: 08035517929
E-mail: yemioduconcept@yahoo.com

ABSTRACT

AIM: The study was carried out at the Radiology Dept, Federal Medical Centre, Owerri, in order to determine the distribution and prevalence of types of fibroids across various age brackets.

METHOD: 586 patients of age bracket (21-50 yrs) were scanned for fibroid and other related pelvic masses. The age brackets were grouped into Early adulthood, Premenopausal and Perimenopausal ages. Findings were somed according to age, location and type of fibroid.

RESULTS: 18.1% (106) had fibroid with Premenopausal age group, (31 - 40yrs) constituting the highest fibroid incidence of 39.6% (42) The least incidence was recorded in peri menopausal age group (41-50yrs) with 28.3% (30). 75.5% (80) were single-type while 24.5% (26) were multiple type. Subserous fibroid is the single-type which had the highest incidence amongst all the single-types with 22.6% (24) and is mostly seen in the premenopausal age. The least forms of fibroid were Submucous and Cervical found in 7.6% (8) and 7.6% (8) respectively of the total population of fibroid patients N=106 and with highest incidence in the Early adulthood 11.8% (4) and premenopausal 11.9% (5).

CONCLUSION: It is therefore proposed that prevalence of fibroid-type may strongly be dependent on age.

Keywords: Fibroids, types; distribution; prevalence; age.

INTRODUCTION

Leiomyomas generally referred to as fibroids are benign tumours arising from smooth muscles of the uterus and fallopian tubes.

The exact etiology of fibroid is uncertain, but it is diagnosed in about 20% to 25% of women 35years of age or older, incidence is up to 7 times higher in black women compared to Caucasians¹. Evidence strongly suggests that fibroids are estrogen dependent and diminish with age hence their rarity in postmenopausal age and prepubertal age.

Pregnancy is known to often encourage fibroids because estrogen blood level at the period is often relatively higher sustaining their rapid growth and degeneration².

Late conceptions in advance maternal age has also been attributed to increased incidence of fibroids³ Desogestrel progestin oral contraceptive users are said, not be prone to having fibroids because the desogestrel pills prevent ovulation by inhibiting estrogen formation by the ovaries⁴

Fibroids are generally classified according to their location⁵. Such classification results in the fibroids being described as Intramural, Submucousal, Subserousal and Cervical. A fibroid may also be Pedunculated if it develops a pedicle which attaches itself to the uterine wall and grows externally into the peritoneal cavity^{6,7,8}

The aim of this study is to determine the distribution and prevalence of fibroid-type(s) in different reproductive age groups and the locality because of paucity of data in the locality.

MATERIALS AND METHOD

586 female patients referred for pelvic scan from June 2005 to May 2006 at the Radiology Department, Federal Medical Centre, Owerri, Nigeria with a provisional diagnosis of leiomyoma were enlisted into the study.

Information about age, parity and duration of symptoms were obtained prior to scan.

The patients' ages were grouped into:

Group 1 - Early Adulthood age 21-30yrs

Group 2 - Premenopausal age 31-40yrs

Group 3 - Peri menopausal age 41-50yrs

Ultrasonic evaluation was carried out using real time scanners: sonoscape SS1-600 and Sonoline S1- 400 siemens fitted with 3.5,MHZ and 5.0 MHZ. curvilinear probes and a 7.5MHZ. "end fired" transvaginal transducer.

Both T AS and EVS were performed on the patients when necessary on full bladder and empty bladder respectively. Sonohysterography (SHG) was also performed when necessary. The type and location of the fibroid identified from each scan was categorized as follows:

- Pedunculated subserous = A
- Intramural = B
- Subserous = C
- Submucous = D
- Cervical = E

Distribution of these fibroids according to age was evaluated.

RESULT

Out of the total number of patients studied N=586, 81.9% (480) showed no evidence of fibroid leaving a total of n=106 (18.1%) who are diagnosed of fibroid.

The age group that had the highest incidence is Premenopausal (31-40) with 39.6% (42). Out of the total patients scanned N=586, 289 (49.3%) are gravid and out of these gravid patients, 8.0% (23) have fibroid coexisting and this is seen highest in the Early adulthood (21-30yrs) with 58.5% (13). Least in Peri menopausal (41-50yrs) with 8.7% (2).

With reference to tables ii and iii, single and multiple occurring fibroids were recorded respectively. 75.5%(80) are found single-type while 24.5% (26) are found multiple-type.

TABLE 1: FIBROID INCIDENCE AND AGE DISTRIBUTION

Age Group	Total Number of Patients Studied N=586	Number of Patients without Fibroid N=480	Number of Patients with Fibroid N=106 %	Number of Gravid Patients N=289 %	Number of Gravid Patients with Fibroid N=23 %
Early Adulthood (21 - 30yrs)	188	154	34 32.1%	149 51%	13 8.7%
Premenopausal (31 - 40yrs)	232	190	42 39.6%	114 39.4%	8 7.0%
Perimenopausal (41 - 50yers)	166	136	30 28.3%	26 9.0%	2 7.7%
Total	586	480 (81.9%)	106 (18.1%)	289	23 (8.0%)

TABLE 2: AGE AND FIBROID TYPE IN DISTRIBUTION I

Age Group	A Pedunculated Subserous %	B Intramural %	C Subserous %	D Submucous %	E Cervical %	Total N=106
Early Adulthood (21 - 30yrs)	3 (8.8%)	9 (26.5%)	8 (23.5%)	4 (11.8%)	3 (8.8%)	27
Premenopausal (31 - 40yrs)	6 (14.3%)	7 (16.7%)	11 (26.2%)	2 (4.8%)	5 (11.9%)	31
Perimenopausal (41 - 50yers)	11 (36.7%)	4 (13.4%)	5 (16.7%)	2 (6.7%)	-	22
Total	20 (18.9%)	20 (18.9%)	24 (22.6%)	8 (7.6%)	8 (7.6%)	80

Table 2 showed single occurring fibroid in 80 (75.5%) patients.

For single fibroid, Pedunculated Subserous has the highest incidence in the Perimenopausal age

with 36.7%(11) while least in Early adulthood 8.8%(3).

Intramural f*. is highest in Early adulthood age with 26.5%(9) least in Perimenopausal 13.5%(4) Subserous f*. occurred most in Premenopausal 26.2%(11), least in the Peri menopausal group 16.7%(5) Submucous f*. predominates most in Early adulthood 11.8%(4) Cervical f*. occurred highest in Premenopausal group with 11.9%(5) and

0%(0) is recorded in the Peri menopausal age. Out of all these fibroids, Subserous f*. has the highest modal incidence with 24(22.6%) and the least frequent are Submucous and Cervical which recorded 7.6%(8) and 7.6%(8) respectively.

Table iii depicts the occurrence of multiple-type in different age groups.

TABLE 3: DISTRIBUTION OF TYPES OF FIBROID ACCORDING TO AGE GROUP

Age Group	A & B %	A & C %	A & D %	A & E %	B & C %	B & D %	B & E %	A TOE (All Types) %	TOTAL N=100
Early Adulthood (21 - 30yrs)	1 (2.9%)	1 (2.9%)	-	-	2 (5.9%)	1 (2.9%)	1 (2.9%)	1 (2.9%)	7
Premenopausal (31 - 40yrs)	-	6 (14.3%)	-	-	1 (2.4%)	1 (2.4%)	-	3 (7.1%)	11
Perimenopausal (41 - 50yrs)	-	-	-	-	2 (6.7%)	-	-	6 (20%)	8
Total	1 (0.9%)	7 (6.6%)	-	-	5 (4.7%)	2 (1.9%)	1 (0.9%)	10(9.4%)	26

Table 3 showed multiple type occurring fibroid in 26 (24.5%) patients.

The occurrence of two-type incidence is the most frequent with 61.5%(16) while the incidence of all-types are seen in 10 (38.5%) patients. A & C represented Pedunculated Subserous and Subserous two-type occurring fibroid has the highest incidence recording 14.3%(6) in the premenopausal group, while the least form is B & E representing Intramural + Cervical fibroids which recorded 0.9%(1) and seen only in the Early adulthood group. Incidence of three and four-types are absent.

Table iv depicts the statistical analysis of the data. Subserous f*. has a mean value (X) of 34.3 and the modal age for the Subserous fibroid is 34.3yrs. with a standard deviation of 7.25. Subserous f* also has the highest frequency-group midpoint value (x; f_i) of 822 which makes it different from others. There is significant relationship established between the type of fibroid and age. (P<0.01).

The mean value of patient with fibroid is 35.12 at N=106 occurring most in the Premenopausal age with 39.6%(42).

TABLE 4: FREQUENCY AND MEAN DISTRIBUTION OF FIBROID

TYPES OF FIBROIDS	FREQUENCY (F ₁)	MEAN (X̄)	STANDARD DEVIATION	EF, X̄
A	20	39.5	7.34	790
B	20	33.0	7.66	660
C	24	34.3	7.25	822
D	8	33.0	8.29	264
E	8	33.1	4.84	254

DISCUSSION

In this study 18.1%(106) of the 586 scanned had fibroid. This is similar to 20% recorded by Tsuda F et al,¹

Highest incidence was seen in the premenopausal group (31-40yrs) which had 39.6% (42/106) while the least incidence was recorded in women who were near menopause, the perimenopausal group (41-50yrs) with 28.3% (30/106).

Most fibroids seen in the Perimenopausal age group showed varying degree of degeneration such as calcification, cysts, hyaline and necrosis. The decline and degeneration could be in accordance with Danforth², who reported that, there is some degree of declination in estrogen level and blood supply to the uterus with advancement in age.

Schwartz et al¹⁰ and Gupta et al¹¹ confirmed the dependence of fibroid on estrogen and blood supply.

Out of 289 (49.3%) patients who were pregnant in the study, 23 (8.0%) presented with fibroid co-existing with cysis and this highest in group 1 (younger women 21-30yrs) with 8.7% (13/149) while lowest in group3 (perimenopausal group)

It is known that fibroids can be solitary or occur in multiples and in types.

In table2, the subserous single type fibroids had the highest occurrence in all the age groups with 22.6% (24) representing the commonest type. Premenopausal group had the highest incidence with 26.2% (II), while Perimenopausal group recorded (16.7%)(5). The modal age for the highest incidence of fibroid is 34.3yrs.

Intramural fibroid had highest frequency in Early adulthood group with 26.5%(9), least in Group 3 with 13.3%(4). This was established by Govan et al⁵ who said the growth of a fibroid starts intramurally from the myometrium and as age advances it grows to be subserous and subsequently fills the entire uterus.

Study shows that some remain intramural and become calcified or degenerated. Govan et al⁵

Pedunculated subserous fibroids are usually extrauterine with attachment (pedicle) to the perimetrium. It was seen mostly in Perimenopausal with 36.7% (11) while 8.8%(30) seen in Early adulthood.

Submucous fibroid was best demonstrated with SHG using normal saline as compared to TVS only.

This finding collaborates those reported by Becker et al⁶. 11.8% (4) of young women had the highest incidence of Submucous fibroid while premenopausal and perimenopausal have the same degree of incidence.

Submucous fibroid may be one of the commonest causes of abnormal bleeding per vagina in young women. Beck W.⁹ Cervical fibroid was seen highest in Premenopausal with an incidence of 11.9%(5). Early adulthood recorded 3(8.8%) while nil was recorded in Perimenopausal. This could be Interpreted as, cervical fibroid not commonly seen in the perimenopausal age.

Large cervical fibroids are known to cause dystocia in pregnancy¹⁰

In multiple fibroid incidence, it could be seen that two-type incidence has the highest occurrence. All-types incidence is mostly found in Premenopausal age. There is rarity of three and four-types seen simultaneously. 80(75.50/0) of fibroids are found single while 24.5%(26) are multiple-type. This is in disagreement with Gupta et al¹¹ report which says that multiple-type fibroid occur more than single-type fibroids.

In conclusion, it could be seen that the type of fibroid incidence depended on age.

At the modal age of 34, one may forecast that the type of fibroid a patient may likely have is Subserous and when multiple it may either be two-type form or all-type form with an incidence ratio of 2: 1

The study could be used as a predictive tool to know what type of fibroid a patient may likely have at a particular age group preceding ultrasound examination in order to aid good and effective management.

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