

## Assessment Of Uterine Leiomyoma In Aba, Abia State, South Eastern Nigeria; A Private Hospital Outlook

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### Abstract

**Background:** Uterine fibroid is a common benign neoplasm of female genital tract and it is prevalent in Africa. Myomas are the most frequently recorded benign smooth muscle tumor of the uterus, affecting 20% - 60% of women of reproductive age and negatively impacting fertility and the outcome of pregnancy.

**Objective:** To assess uterine leiomyoma in a private hospital, Aba, Abia State, South Eastern Nigeria.

**Methods And Materials:** This is a retrospective study of all the patients (321) managed for uterine leiomyoma in four years and relevant information on clinical features, surgical operations, findings at surgeries and postoperative morbidity were retrieved from the medical record unit.

**Results:** The mean age of patients was  $35.81 \pm 7.832$  and the prevalence of leiomyoma is 12.1%, majority of the patients 175 (54.4%) were nulliparous. Greater number of patients 97 (30.4%) were public servants, greater number of patients 136 (42.5%) had abdominal myoma of between 21 to 30 uterine size, One hundred and three (32.0%) patient had intramural location of the fibroids while 136 42.4% had multiple site location of the fibroids. Common mode of clinical presentation was menstrual abnormality. Majority of the surgical operations 239 (74.5%) were abdominal myomectomy and greater part of postoperative morbidities 62 (42.8%) was anemia.

**Conclusion:** Majority of patients with uterine leiomyoma in our environment present late in the course of the disease when they can hardly benefit from conservative treatment. Infertile women with no associated tubal pathologies or adenomyosis had a better chance of conception following myomectomy. There is need to encourage early presentation and prompt diagnosis of patients with uterine leiomyoma.

**Keywords:** Assessment, leiomyoma, Aba, Abia State, South Eastern Nigeria, Private hospital.

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### I. Introduction

Uterine fibroid is a common benign neoplasm of female genital tract and it is prevalent in Africa [1,2]. Myomas are the most frequently recorded benign smooth muscle tumor of the uterus, affecting 20% - 60% of women of reproductive age and negatively impacting fertility and the outcome of pregnancy [3]. The prevalence rate for uterine leiomyoma is approximately 1 in 20 or 5% or 13.6 million people globally [4]. Presently, there are many researches about prevention and management of uterine fibroids but their aetiopathogenesis is still unknown. Epidemiologic profile suggests that uterine fibroids are initiated and/or maintained by stimuli that last for the duration of ovarian activity. Even if adipokines [5], gonadotropins [6], and ovarian peptide may be postulated to have some influence on fibroid onset and growth, oestradiol and progesterone are contenders to play such roles [7]. Clonality studies show that multiple tumors in the same uterus are derived from individual myometrial cells and not through a metastatic process [8].

Cytogenetic abnormalities occur in 50% of uterine fibroids most commonly involving translocation within or deletion of chromosome 7, translocation of chromosomes 12 and 14, and occasionally, structural aberrations of chromosome 6,5,6 This is associated with expression of growth stimulating factors [8] Growth of leiomyomata is partly dependent on ovarian steroids that act through receptors present on both fibroids and myometrial cells; hence its preponderance in the reproductive age group [8,9]. Race is an important epidemiological risk factor for myomas. Prospective studies show that black women have over a three-fold greater frequency of myomas and a relative risk two to three times that in white women [10]. Black women tend to be younger at the time of diagnosis of the disease and also have more severe disease in terms of higher uterine weight and greater likelihood of anemia.[10,11] Smoking, oral contraceptive use, and consumption of green vegetables are protective, while obesity and substantial consumption of red meat increase the risk [11,12].

Myomas vary in size and location. Most myomas causes no symptoms but many women present with significant symptoms which can generally be classified into three distinct categories: abnormal uterine bleeding, pelvic pressure and pain, and reproductive dysfunction. Uterine myomas can generally be managed expectantly, surgically, or medically. Surgery has long been the main mode of therapy for myomas. In developed countries, there is an increasing preference for conservative surgical techniques like laparoscopic myomectomies, hysteroscopic myomectomies, and uterine artery embolization [13,14,15]

Similarly, an increasing place is being found for the use of gonadotropin releasing hormone analogues, and highly focused ultrasound treatment modalities [16]. In our sub-region, as is the case with most of the developing world, hysterectomy and abdominal myomectomy have remained the main modalities of treatment. Most of the existing reviews of this condition in our environment have been from studies carried out in teaching hospitals and other similar public institutions hence the need to re-evaluate this condition from the outlook of a private specialist gynecological practice. Hence, this four-year retrospective study which examined the demographic factors, clinical presentation, modes of management, and post treatment morbidities of these patients.

## **II. Material And Method**

The study was conducted in Simon Specialist Hospital located at Osisioma-Ngwa Local Government Area (LGA) of Abia State in South-Eastern part of Nigeria. Abia State was carved out from former East Central State of Nigeria on August 27<sup>th</sup>, 1991 by the military Government under General Ibrahim Babangida. Abia State lies within approximately latitude 4° and 6° 14° north and longitude 7° 10° and 7° east. The State is bounded to the north with Ebonyi State, to the south and southwest with Rivers State and to the east and southeast with Cross River State and Akwai-ibom State. To the west is Imo State and to the northwest is Anambra State. It covers an area of about 5,243.7 square kilometres which is approximately 5.8 per cent of the total land area of Nigeria with the capital in Umuahia [17]. According to the National Population Census (2006), Abia State has a total population of 2,833,999 projected to 4.12 million up to March 2022 [18]

Abia people are of the Igbo ethnic group and their language is Igbo with English widely spoken and serves as the official language in governance and business. Globally, Igbos are well travelled. Majority of them are pre-dominantly Christians. There are also good number of Muslims and traditional worshippers. They are known and reputed to be industrious, highly market oriented, very hospitable and accommodating, probably due to their migratory nature.

The State is made up of seventeen (17) Local Government Areas, which is made up of eight (8) Urban Local Government Areas and nine (9) Rural Local Government Areas [19]

Abia State has four tertiary institutions namely, viz Abia State University Teaching Hospital, (ABSUTH) Aba city, Rhema University Teaching Hospital, (RUTH) Aba, Federal Medical Centre, (FMC) Umuahia and Abia State Specialist Hospital Diagnostics, (ASHD) Umuahia. There are seventeen (17) General Hospitals, five hundred and seventy-one (571) Primary Health Centres and many privately owned clinics, maternity homes and hospitals.

There are several large markets in Abia State including the Ariaria international markets, new market, Ekeoha shopping plaza and cemetery market, Ubani market Umuahia and local markets scattered in the state where daily buying, selling and manufacturing of commodities take place.

There are several Supermarket and Grocery stores in Aba and Umuahia Cites of Abia State for people's shopping.

**Study Design:** This was a four-year retrospective review of Obstetrics and Gynecological (O & G) surgeries. There was extensive review of the records of all the patients who attended Simon Specialist Hospital Osisioma-Ngwa LGA from January 1<sup>st</sup> 2016 to December 31<sup>st</sup>, 2019.

### **Study Population:**

This comprised of all patients who were on admission during the period of study and they were two thousand six- hundred and forty-six (2646) in number.

**Sample and sampling techniques:** This comprised of all the clinically and histologically diagnosed patients of leiomyoma on admission and they were three hundred and twenty-one (321) in number.

**Research instrument:** The data collection instruments included checklist proforma, calculator, pen and laboratory equipment and paper.

Data collection procedure: Data were collected through extensive review of O & G patients and concentrated on O & G patients socio-demographic characteristics, parity distribution, clinical presentation, uterine size, anatomical distribution, surgical operation performed and postoperative morbidities

Data analysis technique: The data collected were cleaned, coded and entered into the computer for analysis using International Business Machine Statistical Package for Social Science (IBM SPSS) program version 26.0. All the analysis of data was conducted, reviewed and the information gathered, coded and double entry of the data were done. Tables of frequency and percentages of descriptive statistics such as mean, median, mode and standard deviations of the variables was done.

Ethical consideration: Ethical clearance was done at the Abia state University Teaching Hospital, Aba.

### III. Results

The total number of patients who were on admission during the period of study was two thousand six-hundred and forty-six -2646

The clinically and histologically diagnosed patients of leiomyoma on admission during the period of study Simeon Specialist Hospital = 321

The prevalence is  $321/2646 \times 100 = 12.1\%$

The mean age of the patients was  $35.81 \pm 7.832$

**Table 1: Age group distribution**

Age group in years	Number of patients	Percentage
26 – 30	62	19.3
31 – 35	105	32.7
36 – 40	84	26.2
41 – 45	54	16.8
≥46	16	4.9
Total	321	100

Table 1 shows the distribution of patients in their different age groups. The ages ranged from 26 years to 52 years. Large number of patients 105 (32.7%) were in the age range from 31 – 35 while the least number of patients were ≥46 age group. Age group 26 to 30 years were 62 (19.3). and 70 (21.7%) patients were over 40 years of age. Please, see table 1 for more details.

**Table 2: Parity distribution**

Parity	Number of patients	Percentage
0	175	54.4
1	60	18.7
2	23	7.2
3	8	2.5
4	30	9.2
≥5	25	8.0
Total	321	100.0

Table 2 shows 175 (54.4%) patients were nulliparous, 83 (25.9%) patients were of low parity while 25 (8.0%) patients were grand-multiparous. Please see table 2 for more details.

**Table 3: marital status of the respondents**

Marital status	Frequency	Percentage
Single	120	37.4
Married	162	50.5
Widowed	21	6.5
Divorced	18	5.6
Total	321	100.0

Findings from table 3 show that 162 (50.5%) patients were married while 21 (6.5%) patients were single. Please see table 3 for more details.

**Table 4: Occupational distribution of patients admitted for uterine fibroids**

Variables	Frequency	Percentage
Occupational distribution of patients admitted for uterine fibroids	Traders	85
	Teachers	54
	Other Public Servants	97
		30.4

	Students	36	11.2
	Housewives	21	6.4
	Hair Dressers/Tailors	23	7.2
	Catholic Nuns	5	1.6
Total		321	100%

Findings from table 4 show that other public servants 97 (30.4%) constitute most of the occupation of the fibroid patients while Catholic nuns least of the patients managed. Please see table 4for more details.

**Table 5: Uterine size;**

Variables	Frequency	Percentage
10 to <12	5	1.5
12 – 20	123	38.3
21 – 30	136	42.5
>30	57	17.7
Total	321	100.0

Table 5 showed that the sizes of the uterus ranged from 10-week size to 36-week size gravid uterus. Gravid uterus of size 21 – 30-week constituted 42.5%, and uterine size less than 12 weeks constituted 1.5%. Please see table 5 for more details.

**Table 6: Anatomical distribution**

Anatomical location	Frequency	Percentage
Subserous	31	9.6
Intramural	103	32.0
Submucous	46	14.4
Intra-ligamentary	5	1.6
Multiple sites	136	42.4
Total	321	100.0

Findings from this study showed that 136 (42.4%) patients had multiple uterine myomas with myoma nodules occurring at several anatomical sites. One and three (32.0%) had intramural fibroids, 46 (14.4%) patients had submucous fibroids and five (1.6%) case of intra-ligamentary fibroids were encountered in this series. The highest number of fibroid nodules removed from a single patient in this series was 42 nodules. Please see table 6 for more details.

**Table 7: Clinical presentation**

Variables	Frequency	Percentage
Menstrual abnormalities	218	68.0
(a) Menorrhagia	177	55.2
(b) Irregular menses	41	12.8
Lower abdominal swelling	146	45.6
Lower abdominal pain	62	19.2
Infertility	100	31.2
(a) Primary Infertility	36	11.2
(b) Secondary infertility	64	20.0
Secondary dysmenorrhea	93	28.8
Recurrent abortion	5	1.6
Anemia (PCV< 30%)	121	37.6
Low back pain	33	10.4
Frequency of micturition	26	8.0
Constipation	5	1.6

Table 7 showed clinical presentations such as menstrual abnormalities, lower abdominal swelling and pain, infertility, secondary dysmenorrhea, recurrent abortion, anemia, low back pain, frequent micturition and constipation. Please see table 6 for more details.

**Table 8: Surgical operation performed**

Type of surgery	Number of patients	Percentage
Abdominal myomectomy	239	74.5
Total abdominal Hysterectomy (TAH)	67	20.9
TAH – Bilateral Salpingo-oophorectomy	5	1.6
Subtotal Hysterectomy	6	1.8
Polypectomy	4	1.2
Total	321	100.0

Findings from table 7 showed that 239 (74.5%) patients had abdominal myomectomy with or without additional procedure, 78 (24.3%) had hysterectomy with or without additional procedures. Only four (1.2%) patients had polypectomy through the vaginal route. Please see table 8 for more details.

**Table 9: Postoperative morbidities**

Morbidity	Frequency	Percentage
Anemia	62	42.8
Pyrexia	51	35.2
Wound Infection	11	7.6
Urinary tract Infection	18	12.4
Intestinal obstruction	3	2.0
Mortality	Nil	Nil
Total	145	100.0

Findings from table 9 showed that anemia 62 (42.8%) was the leading postoperative morbidity. Others were pyrexia 51 (35.2%), wound infection 11 (7.6%), urinary tract infection 18 (12.4%) and intestinal obstruction 3 (2.0%). Postoperative hospital stays ranged from 5 to 22 day with 86% of the patients discharged from the hospital between the fifth and the seventh postoperative days. Please see table 9 for more details.

#### IV. Discussion

This study assessed uterine leiomyoma in Simeon Specialist Hospital for a period of four years. The prevalence of surgeries for uterine leiomyomas accounted for 12.1% of all gynecological and Obstetric surgeries carried out in the hospital during the period under review. This prevalence was lower than those of studies observed in Imo [20], Enugu [21] and higher than those of South-western Nigeria [22], Kwara State [23], Nnewi in Anambra state [24] and Kano State [25]. The true prevalence of uterine leiomyoma in this environment is however difficult to establish as many of the affected women were asymptomatic or preferred to use unorthodox remedies for their condition and as such were unaccounted for. The differences in the prevalence may be due to sample sizes, location and environmental factors. This could also be due to differences of socio-demographic characteristics of various study population.

In this study, the mean age of the patients is  $35.81 \pm 7.832$  and this is higher than the mean age of participants in a study carried out in Ekiti State University, Ado Ekiti, Ekiti State where multiparous with uterine fibroid had a mean age of 32.61 and those without uterine fibroid had 29.59 [26]. The higher mean ages were consistent with other studies linking uterine fibroids with spontaneous miscarriages, postponement of pregnancy and infertility [27, 28, 29, 30]. Large number of patients 105 (32.7%) were in the age range from 31 – 35 while the least number of patients were  $\geq 46$  age group. Two hundred and forty three (243- 75.7%) of the patients studied presented in the third and fourth decades of life. This finding is comparable with those in Ile-Ife (69.4%) [31] and Ilorin (78.4%) [32]. However, speculatively this is thought to be associated with the preponderance of female sex hormones [33, 34]. Increasingly however, there are reports of women who develop symptoms or have continuing symptoms while taking hormone replacement in their post reproductive years [35]. There is an increased risk of uterine leiomyoma in nulliparous women [36,35]. Two hundred and thirty-nine (54.4%) of the women in this study were nulliparous. Similar to this study, Radmila et al., observed that leiomyoma were much more prevalent among nulliparous women as there was inverse relationship between myoma risk and parity [37]. Women of low parity (Para 1 and Para 2) were at risk [36, 34] and accounted for 25.9% of the patients in this study. An explanation that has been put forward was that myoma formation may be viewed as a response to injury, potentially from hypoxia in myometrial cells during menstruation [34]. Increased exposure to menstrual cyclicity especially when pregnancy is delayed on account of career pursuit will increase the likelihood of the tumor developing in nulliparous and low parity women. Finding of this study contrasted with the study at Khyber Teaching Hospital Peshawar [38] where it was found that multiparous women owned fibroids greater often than the nulliparous in their pre-menopausal years which indicated their characteristics slow development rate. Fibroids are seldom found earlier than puberty and quit to develop after menopause [39, 40, 41, 42].

Studies in women undergoing in-vitro fertilization have shown that an intramural fibroid halved the chances of continuing pregnancy after assisted conception [43]. Fibroids distorting the uterine cavity appear to be associated with a reduced chance of pregnancy [44]. However, in Africa, uterine leiomyoma is not an uncommon finding in multiparous women [45]. In this study, 25 patients (8%) were grand-multiparous as compared to 28% in Ilorin study [34] and 20% in Ile-Ife study [33]. Racial predisposition and tendency to early marriage which make these women grand-multiparous even before the age of 30 years have been considered as possible explanations [34].

The commonest clinical presentation in this review was menstrual abnormalities. The prevalence of 68.0% found in this study was similar to 70.4% reported in Zaria [46] but higher than 55.2% reported in Ilesa

[31] and 60.2% reported in Ile-Ife [33]. Menorrhagia is the most common menstrual abnormality associated with uterine leiomyomata, as was found in this series, and occurs when the endometrial cavity surface area is increased by sub-mucous fibroid. Excessive uterine bleeding does often happen in the absence of sub-mucous fibroids and is believed to be because of congestion and dilatation of the endometrial venous plexuses caused by obstruction of myometrial veins by fibroids, resulting in profuse bleeding from the endometrium [47, 48]. A fibroid polyp growing into the uterine cavity may present with inter-menstrual bleeding or post-coital bleeding if it is extruded through the cervical canal into the vagina [47].

Age group prevalence highlights a notable trend regarding the age distribution of women diagnosed with uterine fibroids. The peak prevalence occurred in age range 31-35 years, comprising 32.7% of the studied population. This finding aligns with existing research [49, 50] indicating that fibroids are most commonly diagnosed during a woman's reproductive years. The prevalence gradually decreases in older age groups, with the lowest frequency observed in the  $\geq 46$  age group of 4.9% probably implying the susceptibility to and chances of developing uterine fibroid decreases with increase in age. Also, the observable decrease in the occurrence of fibroid in  $\geq 46$  age group may be attributed to the onset of menopause and the reality that there is a reduction in the systemic circulation of oestrogen [51]. However, results of the present study contradict similar works [52] which inferred a rise in prevalence of uterine fibroids in adolescents probably due to early menarche, exposure to exogenous oestrogen and other factors like obesity which usually influence fibroid growth. Anemia were the most common complications of myomectomy but with better access to blood transfusion facilities and use of prophylactic antibiotics, the overall morbidity, is comparable to that of hysterectomy [53].

## V. Conclusion

Majority of patients with uterine leiomyoma in our environment present late in the course of the disease when they can hardly benefit from conservative treatment. Infertile women with no associated tubal pathologies or adenomyosis had a better chance of conception following myomectomy.

## Reference

- [1] Eze,C., U., Odumeru, E., A., Ochie, K., Nwadike, U., I., Agwuna, K., K., Sonographic Assessment Of Pregnancy Co-Existing With Uterine Leiomyoma In Owerri, Nigeria. *Afr Health Sci.* 2013;13(2):453-60. Doi: 10.4314/Ahs.Vi3i2.36. PMID: 24235949; PMCID: PMC3824468.
- [2] Zhao, R., Wang, X., Zou, L., Li., G., Chen, Y., Li., C., Zhang, W., Adverse Obstetric Outcomes In Pregnant Women With Uterine Fibroids In China: A Multicenter Survey Involving 112,403 Deliveries. *Plos One.* 2017;12(11);E0187821. Doi: 10.1371/Journal.Pone.0187821. PMID:29136018; PMCID: PMC5685483.
- [3] Laughlin, S., K., Schroeder, J., C., Baird, D., D., New Directions In The Epidemiology Of Uterine Fibroids. *Semin Repro Med.* 2015; 28(3): 204-17. Doi: 10.1055/S.0030-1251477. Epub 2015 Apr 22 PMID: 20414843; PMCID:PMC5330647.
- [4] Munusamy MM, Sheelaa WG, Lakshmi VP. Clinical Presentation And Prevalence Of Uterine Fibroids: A 3-Year Study In 3-Decade Rural South Indian Women. *International Journal Of Reproduction, Contraception, Obstetrics And Gynaecology.* 2017; 6: 5596-601.
- [5] Wakabayashi, A., Takeda, T., Tsuiji, K., Li. B., Sakata, M., Morishige, K., Yaegashi, N, Kimura,T., T., Antiproliferative Effect Of Adiponectin On Rat Uterine Leiomyoma ELT-3 Cells. *Gynecol Endocrinol*, 2011; 27(1): 33 – 8. Doi:10.3109/09513590.2010.487605. Epub 2010.PMID: 20504099.
- [6] Plewka, D., Marcaynski. J., Morek, M., Bogunia, E., Plewka, A., Receptor Of Hypothalamic-Pituitary-Ovarian-Axis Hormone In Uterine Myomas. *Biomed Res Int.* 2014;2014:521313. Doi: 10.1155/2014/521313. Epub2014.PMID: 25050358; PMCID PMC4090522
- [7] Moravek, M., B., Yin, P., Ono, M., Coon, J., S., 5<sup>th</sup>, Dyson, M., T., Navarro, A., Marsh, E., E., Chakravarti, D., Kim, J., J., Wei, J. J., Bulun, S., E., Ovarian Steroids, Stem Cells And Uterine Leiomyomas: Therapeutic Implications, *Hum Reprod Update.* 2015; 21(1): 1 – 2. Doi: 10.1093/Humupd/Dm048. Epub 2014PMID: 25205766; PMCID: PMC4255606.
- [8] Lumsden M. Benign Diseases Of The Uterus. In: Edmunds DK (Ed). *Dewhurst's Textbook Of Obstetrics And Gynaecology, Seventh Edition.* Oxford: Blackwell Publishing; 2017. PP 636-644
- [9] Monga A. Benign Diseases Of The Uterus And Cervix. In: *Gynaecology By Ten Teachers, Twenty Second Edition.* London: Book-Power; 2016. PP: 105-109.
- [10] Marshall L, Spiegelman D, Barbieri R, Et Al. Variation In The Incidence Of Leiomyoma Among Premenopausal Women By Age And Race. *Obstetrics And Gynaecology* 2007; 90: 967-973.
- [11] Steward A.E. Uterine Fibroids. *The Lancet* 2021, 357: 293-298.
- [12] Chiafforino F, Parazzinni F, Lavecchia Et Al. Diet And Uterine Myomas. *Obstetrics And Gynaecology* 2009; 94: 395-398.
- [13] Lieng, M., Berner, E., Busund, B., Risk Of Morcellation Of Uterine Leiomyosarcomas In Laparoscopic Supracervical Hysterectomy And Laparoscopic Myomectomy: A Retrospective Trial Including 4791 Women. *J Minim Invasive Gynecol* 2015; 22(3):410-14.
- [14] Dutton S, Hirst A, Mcpherson K, Nicholson T, Maresh M. A UK Multicentre Retrospective Cohort Study Comparing Hysterectomy And Uterine Artery Embolisation For The Treatment Of Symptomatic Uterine Fibroids (HOPEFUL Study): Main Results On Medium-Term Safety And Efficacy. *BJOG* 2017; 114(11):1340-51.
- [15] Gupta J, Sinha A, Lumsden MA, Hickey M. Uterine Artery Embolization For Symptomatic Uterine Fibroids. *Cochrane Database Syst Rev* 2015; (5):CD005073. Available At: <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005073.Pub2/Pdf/Standard> [Accessed 12 July 2018].
- [16] Morita Y, Ito N, Hikida H, Takeuchi S, Nakamura K, Ohashi H. Non-Invasive Magnetic Resonance Imaging Guided Focused Ultrasound Treatment For Uterine Fibroids – Early Experience. *Eur J Obstet Gynecol Reprod Biol* 2018;139(2):199-203.
- [17] Federal Republic Of Nigeria 1992 Boundary Official Gazette, No 2 Abuja- 2<sup>nd</sup> February 1992 Vol. 96 Pg B20 -21

- [18] Federal Republic Of Nigeria 2006 Population Census Official Gazette, No 2 Abuja- 2<sup>nd</sup> February 2009 Vol. 96 Pg B20 -21 Projected Up To 2016 (Inclusive Osisioma Ngwa Local Government Area)
- [19] Abia State Ministry Of Local Government And Chieftaincy Affairs. (2021). 2021 Annual Report, Ogurube Layout, Umuahia.
- [20] Eze, C. C., Ajugwo, G. C., Orume, A. S., Nwaeze, K. E., Anaebonam, E., & Onyemeka, R. M., Prevalence And Burden Of Symptomatic Uterine Leiomyomata Among Women In Imo State, South-Eastern Nigeria. *GSC Biological And Pharmaceutical Sciences*, 2021, 16(02), 032–037. DOI: <https://doi.org/10.30574/Gscbps.2021.16.2.0218>.
- [21] Ozumba BC, Nzegwu MA, Nyikam AA. Histological Patterns Of Gynaecological Lesions In Enugu, Nigeria, A Five-Year Review From January 1, 2000 To December 31, 2004. *Advanced Bioresources*. 2011; 2(2): 132-6.
- [22] Ukwanya V, Madumezia N, Afolayan O, Alese, Thomas W. Prevalence Of Uterine Fibroid In South- Western Nigerian Population: A Sonographic. *Journal Exp Clinical Anatomy*. 2015; 14: 24-9.
- [23] Omokanye LO, Salaudeen GA, Saidu R, Jimoh AAG, Balogun OR. Surgical Management Of Uterine Fibroids At The University Of Ilorin Teaching Hospital: A 5-Year Review. *Global Res. J. Med. Sci*. 2012; 2(2): 018 – 022.
- [24] Ezeama CO, Ikechebelu JI, Obiechina NJ, Ezeama NN. Clinical Presentation Of Uterine Fibroids In Nnewi, Nigeria: A 5 Year Review. *Annals Of Medical And Health Science. Research*. 2012; 2(2): 114-118.
- [25] Yakasai IA, Ugwa EA, Otubu J. Gynaecological Malignancies In Aminu Kano Teaching Hospital Kano: A 3 Year Review *Journal Of Clinical Practice*. 2018; 16: 63-66.
- [26] Pius AI, Odetola Amoo A. Surgical And Delivery Outcomes Of Coexisting Uterine Fibroids With Pregnancies In Nigeria. *Clin J Obstet Gynecol*. 2024; 7: 037-041. DOI: 10.29328/Journal.Cjog.1001161
- [27] Tîrnovanu MC, Lozaneanu L, Tîrnovanu ŞD, Tîrnovanu VG, Onofriescu M, Ungureanu C, Toma BF, Cojocaru E. Uterine Fibroids And Pregnancy: A Review Of The Challenges From A Romanian Tertiary Level Institution. *Healthcare (Basel)*. 2022;10(5):855. Doi: 10.3390/Healthcare10050855. PMID: 35627994; PMCID: PMC9141014.
- [28] Ani VC, Ogabido CA, Okpala BC. Coexisting Fibroid In Pregnancy And Its Labour Outcome In Nigeria. *World J Adv Res Rev*. 2022 [Cited 2023 Dec 12];16(1):844–850. <https://www.wjarr.com/content/Coexisting-Fibroidpregnancy-And-Its-Labour-Outcome-Nigeria>
- [29] Abam DS, Kasso T. Uterine Fibroids And Pregnancy: A Review Of The Challenges. In: Abduljabbar HS, Editor. *Obstetrics. Intech*; 2017 [Cited 2023 Dec 12]. <http://www.intechopen.com/books/Obstetrics/Uterine-Fibroids-And-Pregnancy-A-Review-Of-The-Challenges>
- [30] Zimmermann A, Bernuit D, Gerlinger C, Schaeffers M, Geppert K. Prevalence, Symptoms And Management Of Uterine Fibroids: An International Internetbased Survey Of 21,746 Women. *BMC Womens Health*. 2022 Mar 26;12:6. Doi: 10.1186/1472-6874-12-6. PMID: 22448610; PMCID: PMC3342149.
- [31] Ogunniyi SO, Fasubaa OB. Uterine Fibromyoma In Ilesa. *Nigerian Medical Practitioner*. 2010; 19(9): 93-95
- [32] Olatinwo A, Ofiong R. An Analysis Of Surgically Treated Cases Of Uterine Fibroids At The University Of Ilorin Teaching Hospital, Ilorin Nigeria. *Nigeria Journal Of Surgical Research*. 2010; 2(1): 6-11.
- [33] Komolafe J, Makinde N, Ajadi A, Dayo A. Uterine Leiomyoma In Ile-Ife, Nigeria. *Tropical Journal Of Obstetrics And Gynaecology* 2014; 21:103-106.
- [34] Aboyeji AP, Ijaya MA, Uterine Fibroids: A Ten-Year Clinical Review In Ilorin, Nigeria. *Nigerian Journal Of Medicine* 2012, 11(1): 16-19.
- [35] Steward A.E. Uterine Fibroids. *The Lancet* 2011, 357: 293-298.
- [36] Kwawukume EY. Uterine Leiomyomas. In: Kwawukume EY, Emuveyan EE. (Eds). *Comprehensive Gynaecology In The Tropics*. Accra: Graphic Packing Ltd. 2015; 124-137.
- [37] Begum S, Khan S. Audit Of Leiomyoma Uterus At Khyber Teaching Hospital Peshawar. *Journal Of Ayub Medical College Abbottabad* 2014; 16(2)
- [38] Hart R, Khalaf Y, Yeong C, Seed P, Taylor A, Braude P. A Prospective Controlled Study Of Effect Of Intramural Uterine Fibroids On Outcome Of Assisted Conception. *Human Reproduction*. 2011; 16:2411-7.
- [39] Kulkarni MR, Dutta I, Dutta DK. Clinicopathological Study Of Uterine Leiomyomas: A Multicentric Study In Rural Population. *The Journal Of Obstetrics And Gynecology Of India* 2016; 66(1):412-6.
- [40] Akinyemi, B. O., Adewoye, B. R. And Fakoya, T. A., Uterine Fibroid: A Review. *Nigerian Journal Of Medicine*. 2004; 13(4): 318-329. PMID: 15523855.
- [41] Ezeama, C. O., Ikechebelu, J. I., Obiechina, N. J. And Ezeama, N. N., Clinical Presentation Of Uterine Fibroids In Nnewi, Nigeria: A 5 Year Review. 2012
- [42] Tocci, A., Greco, E. And Ubaldi, F. M., Adenomyosis And Endometrial-Subendometrial Myometrium Unit Disruption Disease Are Two Different Entities. *Reproductive Biomedicine Online*. 2018; 17(2): 285- 291.
- [43] Kunde D, Khalaf Y. Alternatives To Hysterectomy For Treatment Of Uterine Fibroids. *The Obstetrician & Gynaecologist*. 2014; 6: 215 – 227.
- [44] Ogunbode O. Environmental Factors In The Management Of Uterine Fibroids. *Tropical Journal Of Obstetrics And Gynaecology*. 2014; 2(1): 119-120.
- [45] Emembolu JO. Uterine Fibromyomata: Presentation And Management In Northern Nigeria. *International Journal Of Gynaecology And Obstetrics*. 2017; 25:413-416.
- [46] Vollenhoven BJ, Lawrence AS, Healy DI. Uterine Fibroids: A Clinical Review. *British Journal Of Obstetrics And Gynaecology* 2010; 97: 285-298.
- [47] Samson O, P., Ekaete V, U., Bassey E, A., Wueseter A, I., Usani E, U., Samuel E, A., V, I., Eru M, E., Anozeng O, I & Nneoyi, O, E., Ultrasound Evaluation Of Uterine Fibroids Among Women Of Child Bearing Age: A Single Centre Study In Port Harcourt Metropolis. *GLOBAL JOURNAL OF PURE AND APPLIED SCIENCES*. 2024; VOL. 30: 351-357. DOI: <https://dx.doi.org/10.4314/gjpas.V30i3.9>
- [48] Olotu, E. J., Osunwoke, E. A., Ugboma, H. A. And Odu, K. N., Age Prevalence Of Uterine Fibroids In South-Southern Nigeria: A Retrospective Study. *Scientific Research And Essay*; 2008: 3(9), 457-459.
- [49] Lawal, Y., Yaro, I. B., Rabi, A. And Emmanuel, R., Prevalence And Sonographic Patterns Of Uterine Fibroids In Northern Nigeria. *Nigerian Journal Of Clinical Research*. 2019. 8, 249.
- [50] Okon, M. And Olotu, E. J., Association Between Age, BMI, And The Type And Location Of Uterine Leiomyoma: A UPTH Study. *European Journal Of Biomedical And Pharmaceutical Sciences*; 2020; 7(1): 103-107
- [51] Ernest, A., Nwakalebela, A. And Mpondo, B. C., Uterine Leiomyoma In A 19-Year-Old Girl: Case Report And Literature Review. *Malawi Medical Journal*. 2016; 28(1), 31-33.
- [52] Sparic R, Mirkovic L, Malvasi A, Tinelli A. Epidemiology Of Uterine Myomas: A Review. *International Journal Of Fertility & Sterility* 2016; 9(4):424.