Outcome of Abdominal Myomectomy in Rivers state university teaching hospital, Port Harcourt: A 5-year review

ABSTRACT

Background:

The aim of this study is to highlight abdominal Myomectomy as a common treatment for symptomatic uterine fibroids in Rivers State University Teaching Hospital (RSUTH). Also highlight its associated perioperative complications.

Method:

This was a retrospective and observational study of all cases of abdominal myomectomy in this Hospital from January 2017 to December 2021. Data was obtained from the gynecological ward, theatre and the case notes of all affected patients. Additional information was extracted from their anaesthetic charts. Data was analyzed using SPSS version 20.

Results:

Total number of patients that had surgical intervention for symptomatic uterine fibroids between the 5-year period were 540. However, 32 (6%) had Total Abdominal Hysterectomy (TAH), subtotal Hysterectomy, and polypectomy(intracavitory fibroids that were extruded through the cervix into the vagina).These were excluded from the study. 508 (95%) had Abdominal myomectomy. This was a uterus preserving surgery.

Indications for surgery included:

Infertility co-existing with fibroid	62.5%
Excessive Menstrual blood loss.	25.3%
Huge Abdominal pelvic Mass.	10%
Pressure symptoms.	3.2%

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All the patients had their packed cell volume (pcv) optimized till at least 30% before surgery. All other basic investigations, like full blood count, Electrolyte urea and creatinine, Liver function test, urinalysis and retroviral screening were done before surgery. Blood was grouped and cross matched for all, except 4 patients who were insistent on not taking blood because they were Jehovah Witnesses. They provided alternative to blood. E.g. Haemacel.

Anaesthesia was regional (spinal or epidural). Only one patient had complication of spinal Anaesthesia (she had total spinal). Intra operative blood loss was 500-800ml in 79% of the cases (405). 21% had blood loss > 800ml and had intra operative blood transfusion.

Other blood transfusions were done post operatively, depending on amount of blood in the drain bag or the clinical features of anaemia in the patient. Also post operative packed cell volume of <24% was an indication for blood transfusion.

Surgical interval was between 90 minutes to 4 hours. This was dependent on the skill and experience of the surgeon, uterine size, number of fibroid nodules, presence of adhesion as occurred in patients with recurrent fibroids or other previous Gynaecological surgeries. Complications were fever, wound sepsis/wound breakdown, pelvic collection, abdominal distention secondary to paralytic ileus and sepsis. No deaths were recorded.

Conclusion:

Abdominal myomectomy generally has a favourable outcome. It is the most available form of treating symptomatic uterine fibroid in our facility.

More complex methods like the use of laparoscopy, Hysteroscopy, high intensity focused ultrasound (HIFU) are yet to gain popularity, due to lack of skilled manpower and lack of appropriate equipment.

Patients packed cell volume needs to be optimized before surgery and at least two units of blood made available.

KEY WORDS:

RSUTH, Abdominal Myomectomy, Hysterectomy, fibroids complications, symptomatic.

Introduction

Uterine fibroids, also known as leiomyomata are benign tumours of the uterus. It is usually commoner among the black race, and has genetic predisposition. It is estimated that more than 40% of first- degree female relatives of women with leiomyoma will develop fibroids sometime during their lifetime. It may present with symptoms or may be asymptomatic.[4]

The incidence of leiomyomata far exceeds the frequency of clinical problems, with as many as 50% of women having identifiable fibroids at menopause.

Symptomatic uterine fibroids require treatment. Treatment could be expectant management, medical management especially to control excessive blood loss, surgical management and radiological management. Abdominal myomectomy is the most common surgical intervention for uterine fibroids [1,2,3] Abdominal myomectomy is usually done for women in their child bearing age. Beyond this period, hysterectomy is preferred. Cervical or sub mucous fibroids protruding into the vagina with a stalk can be enucleated or excised per vaginam. Uterine fibroids can also be removed laparoscopically. Radiological methods, like the use of High Intensity Focused Ultrasound are currently used for treatment of fibroids. This study is focused on abdominal myomectomy, a surgical method of treating Uterine Fibroids in RSUTH.

Infertility, secondary to uterine fibroid is a major indication for abdominal myomectomy.[1,2,3] Other indications are excessive menstrual loss, recurrent pregnancy losses, Abdominal swelling, Pressure symptoms like urinary frequency, urinary retention, leg swelling, dysmenorrhea. Increasingly, women present in the gynaecological clinic with uterine size above 20weeks. These huge fibroids appear because of delayed child bearing, academic and career pursuits. When the fibroids cause delay in pregnancy, recurrent pregnancy losses or pressure symptoms, they now present in the hospital for surgical intervention. [3,4,5] Studies have shown that myomectomy is a safe alternative to hysterectomy for women who wish to preserve their reproductive functions, with no significant difference in perioperative morbidity. [4, 5]

Complications include anaesthetic complications, like aspiration pneumonitis, anaphylaxis, malignant hyperthermia, hypoxic brain injury, cardiovascular collapse, cardiac arrest, Intra-operative and post-operative haemorrhage, trauma to bladder, ureter, intestines or rectum, infection and intestinal obstruction.[1, 2, 3] Some patients are re-admitted due to late complications. Death could also be a complication.

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Study Aims and Objectives

The aim of this study is to highlight the outcome of abdominal myomectomy in RSUTH. It is the commonest surgical intervention (94%) for all cases of symptomatic uterine fibroid in this facility. This study will also highlight the complications of surgery in our facility and Sub Saharan Africa.

Method

This is a retrospective and observational study of abdominal myomectomy cases done in our facility from January 2017 to December 2021. The Rivers State University Teaching Hospital [RSUTH] is a newly established Teaching Hospital of the College of Medical Sciences, Rivers State University. It is situated in the heart of Port-Harcourt, the capital of Rivers State, which has a population of 5,198,716 from last census conducted in 2006. It receives referrals from both public and private hospitals within Port-Harcourt and its environs. Data was obtained from gynaecological ward, theatre and case notes on all patients involved in the study. Case notes were reviewed and analysed. Additional information was got from the anaesthetics chart and theatre notes. Patients who had Total abdominal hysterectomy (TAH) and subtotal hysterectomy were excluded. Ethical approval was obtained from RSUTH ethical research committee before commencement of studies.

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Data Analysis

Analysis of data was done using SPSS software version 20. The relationship between sociodemographic factors, clinical presentation, intra operative events, post-operative events and complications were determined using students t-test (for continuous variables) and the chi-square test for (categorical variables).

Results

Total number of patients that had surgical intervention for symptomatic uterine fibroid from January 2017 to December 2021 were 540. 32(6%) had Total Abdominal Hysterectomy(TAH), subtotal hysterectomy,and Polypectomy for intracavitory fibroids that had extruded through the cervix with a stalk. These were excluded from the study. 508 had abdominal myomectomy.(a uterus sparing surgery). These were included in this study (94%).

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The socio demographic characteristics of patients involved were as follows:

Table 1: The socio demographic characteristics of patients

Year	Number of patients
2017	84
2018	104
2019	122
2020	80
2021	150
Total	540

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Total number of women that had abdomen myomectomy, 508.

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Table 2: Age distribution of patients who had abdominal myomectomy

Age (years)	Number	Percentage
20-25years	13	2.5%
26-30years	95	19%
31-35years	305	60%
36-40years	92	17%
41-45years	7	1.3%

The highest incidence of abdominal myomectomy was between 31-35 years (60%).It is unusual for fibroids to become symptomatic before age 30.Patients above 40 years were counselled for hysterectomy, although some of them rejected this counsel, with the excuse that they will do Invitro Fertilization(IVF) after myomectomy.

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Null parity. 69%
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Indication for surgery:

Infertility /recurrent miscarrages———————— 72%

Menorrhagia ———— 25%

Pressure symptoms—— 3%

Infertility, nulli parity, recurrent pregnancy loss were the major reasons for giving consent for abdominal myomectomy. This was followed by excessive blood loss and pressure symptoms when medical management fails.

Table 3: Estimated blood loss at surgery:

Amount of blood loss (ml)	Number	Percentage
Less than 500ml	94	18.5%
Greater than 500ml	400	78.7%
Greater than 1,000	14	2.8%

The surgeries were done by the consultants in all the 5 gynaecological Units in this facility. Blood loss depend on the skill and speed of the surgeon, The number of fibroid nodules, uterine size and accuracy in blood loss estimation.

Table 4: Blood Transfusion:

Units of blood transfused	Number of patients	Percentage
Nil transfusion	7	1.2%
1-2units	402	78.8%
3-4units	85	17%
>4 units	14	2.8%

Blood loss for each surgery was calculated by Summing up Blood collected intra operatively, via suction, Abdominal packs fully soaked were estimated to have absorbed 150ml, Standard gauze sheets fully soaked as 15ml, Blood on the operating table and floor= 200ml. Addition of all this, when estimated as > 800ml, patient was transfused intra-operatively. Post-operative transfusion

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was determined by blood loss in the drain bag beyond 500ml, post operative packed cell volume of <24% and clinical features of anaemia or hypovolemic shock. Highest number of patients who had blood transfused was 1-2 units (78.8). Patients provided at least 2 units of blood each before surgery.

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Table 5: Complications of Myomectomy

Complications of Myomectomy	Number	Percentage
Fever (Tempr >38*)	180	22.2%
Anaemia/Hypovolaemia	268	33.1%
Wound breakdown	51	6.3%
Anaesthetic complication	1	0.1%
Re-admission after 10-14days	9	1.1%
Death	None	0%
Wound sepsis	300	37.1%

Some of the patients had more than one complication. E.g. Anaemia, wound sepsis, wound breakdown. Fever subsided for most of the patients after the first 72 hours. 9 patients were readmitted due to severe abdominal pains, abdominal distention, vomiting and intestinal obstruction secondary to sepsis. Number of patients with wound sepsis was also significant.

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Table 6: Chi-Square Tests[c]

	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)	Point Probability
Pearson Chi-Square	**4.730[a]**	**1**	**.030**	**.063**	**.063**	
Continuity Correction[b]	**2.587**	**1**	**.108**			
Likelihood Ratio	**3.771**	**1**	**.052**	**.063**	**.063**	
Fisher's Exact Test				**.063**	**.063**	
Linear-by-Linear Association	**4.636[d]**	**1**	**.031**	**.063**	**.063**	**.056**

N of Valid Cases	**540**

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 1.08.
b. Computed only for a 2x2 table
c. For 2x2 cross tabulation, exact results are provided instead of Monte Carlo results.
d. The standardized statistic is 2.153.

The table shows that the association between blood transfussion and surgical intervention is significant (x=.032 p<.05). This means that there is a relationship between blood transfusion and successful surgical intervention.

Discussion

The Highest incidence of uterine fibroid (60%) occurred between the ages of 31-35years. This is comparable to an American study where the incidence of uterine fibroids was 60% at 34-35years among African-American women.[4]An accurate incidence of uterine fibroids will be difficult, since only patients with symptoms come for medical attention in the hospital. 50% of post menopausal.

Hysterectomy specimens are said to contain fibroids.[12]All the patients Studied were Nigerians. This is also comparable to the studies that noted high incidence of uterine fibroids among the black race.[1,2,3,4] Although it is commoner among the black race, uterine fibroid have been seen in all races[12]

Infertility was the major indication for surgery in this study. Another study noted abdominal swelling as the major indication for surgery. Most Nigerian women are unwilling to give consent for surgery, except when it affects their fertility. This was also our findings in this study.[1,2]

There is evidence of an inverse relationship between the incidence of fibroid and parity. Pregnancy is known to be protective against uterine fibroids. Ischaemia of the uterus during parturition and selective apoptosis of small lesions during post-partum uterine remodelling are possible explanations.

Heavy menstrual bleeding was a major symptom of uterine fibroids, especially submucous and intramural fibroids. Most patients prefer medical treatment for this symptom, but will give consent to abdominal myomectomy when infertility co-exists with these complaints.' This is

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understandable because of the obvious scar on the abdominal wall and other morbidities that could be associated. More so if the lady is single.

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Estimated blood loss had a direct co-relation with the number of fibroid nodules extracted and uterine size. Patients with few fibroid nodules had minimal blood loss compared to those with large number of fibroid nodules and large uterine size.

Surgical expertise of the surgeon and experience also contributed to amount of blood loss

Short interval of surgery corresponded to less blood loss. There are different methods for estimating intra operative blood loss e,g gravimetric, photometry and visual estimation. The method used in this study was visual estimation. This is usually a very subjective and less accurate.

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Method.

Proper closure of the cavities where fibroids were enucleated, led to prevention of haematoma and less blood loss.

Haemostatic techniquets used were tourniquet at the uterine isthmus before any incision was made on the uterus. Use of strong sutures like Vicryl and Polyglaclin also ensured uterine haemostasis and reduced blood loss.

The tourniquet time in this facility is 45-60 minutes. When the tourniquet is released and enucleation of fibroid nodule is incomplete, tourniquet is re-applied after adequate perfusion of the uterus. This is to prevent ischaemic injury to the uterus and release of toxic metabolites.[1, 2, 3]

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Injection of vasopressin into the uterine muscle is also used to control intra operative haemorrhage. Shrinkage of the fibroids before surgery can also reduce intra operative blood loss. This can be achieved by use of GnRH agonists, mife pristone, aromatase inhibitors and ulipristal.[9, 10, 11]

Blood transfusion occurs in > 90% of patients in this study, despite optimising their packed cell volume (PCV) to >30% before surgery.

Adequate Packed cell volume is necessary to prevent post-operative anaemia, hypovolemic shock, aid wound healing and prevent sepsis. Hence the need for transfusion.

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Anaesthesia used for all the cases in this study was regional anaesthesia (Spinal and Epidural).

This resulted in very minimal anaesthetic complications as compared to general Anaesthesia. The only patient that had total spinal as a complication was transferred to intensive care unit of RSUTH where she recovered after 2weeks.

Other complications like fever, wound sepsis, wound breakdown, intestinal obstruction secondary to sepsis were common.

Febrile illness amongst post-operative case were largely due to transfusion reactions. Fever was also due to haematoma formation from improper obliterated cavities within the uterus after enucleation of fibroids. Fever could also be a sign of sepsis.

More than 50% of patients had wound sepsis or wound breakdown (dehiscence). This was a common finding in our surgical ward due to poor infection control measures. Inadequate or expired drugs intake could be contributory .Poor storage system could also affect potency of the drugs, especially antibioticss. This is a major problem in developing and "3rd world" countries, Nigeria inclusive.

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Conclusion:

Abdominal myomectomy remains a common and relatively safe method of treating symptomatic uterine fibroids.

There were no deaths recorded in the study. This is comparable to other studies in Ilorin, Enugu, Jos and Awka, all in Nigeria.

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Consultants and senior registrar carry out this surgery successfully.

Better surgical options for treating uterine fibroids are Laparoscopic myomectomy and Hysteroscopic resection. These methods are associated with lesser complications, shorter stay in hospital and shorter loss of man-hours.

Blood transfusion services should be readily available. It is imperative to counsel patients on the possibility of blood transfusion. There is need to optimize haemoglobin level before surgery as blood loss is a major risk factor.

Infection control measures needs to be re-evaluated in our facility, so that post-Operative infection will be reduced.

Further research work need to be done to find out measures to reduce intra operative and post-operative blood loss during myomectomies.

Update courses and training are needed to be abreast with current innovations.

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