



Benign hysterectomies: A 5-year review in Enugu State University Teaching Hospital, Enugu, Nigeria

*Boniface Uwaezuoke Odugu¹, Michael Oluchukwu Amara*¹, Linda Uzo Amara¹*

ABSTRACT

Background

Hysterectomy is the second most common surgical procedure performed in gynaecological practice after caesarian section. It is generally safe without incidents but, in rare cases, serious complications may occur.

Methods

We conducted a retrospective cross-sectional study on the types, indications and complications of benign hysterectomy carried out at Enugu State University Teaching Hospital, Nigeria, between January 2014 and December 2018. Cases were selected from the operation register. Of 160 recorded hysterectomies that had taken place at the hospital, 61 met the inclusion criteria.

Results

We found that 51% (31/61) of hysterectomies were in high parity women (>4 children), 38% (23/61) in women with 1-4 children, and 11% (7) in nulliparas women. Most (43/61) of the hysterectomies were performed via the abdominal route. Total abdominal hysterectomy (TAH) was the most common procedure (67%). Benign conditions (leiomyoma, adenomyosis and dysfunctional uterine bleeding) accounted for 44% (27/61) of hysterectomy cases; pelvic organ prolapse (POP) 30%; premalignancies 21%, Gestational Trophoblastic Disease (GTD) 3% and chronic pelvic pain 2%. Patients with benign conditions were more likely to be professional workers, while those with pelvic organ prolapse were more likely to be farm labourers.

Conclusion

Benign indications such as leiomyoma and adenomyosis are common reasons for benign hysterectomy. Benign hysterectomies are safe with minimal complication rates. The abdominal route remains the most popular route for benign hysterectomies in our environment, although surgeons seemed to prefer the vaginal approach for POP in particular. To avoid vulnerability to losses associated with medical information stored in papers, a more reliable means of storing medical information should be considered.

Keywords: Hysterectomy, Benign hysterectomy, Nigeria

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¹ Department of Obstetrics and Gynaecology, Enugu State University Teaching Hospital, Enugu, Nigeria

*Corresponding author: Michael Oluchukwu Amara

Department of Obstetrics and Gynaecology, Enugu State University Teaching Hospital, Enugu, Nigeria

Email: micoluchukwu4ug11@yahoo.com

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INTRODUCTION

Globally, hysterectomy rates of 2.1-4.8 per 1,000 women-years have been reported for benign uterine diseases, making up roughly 90% of all hysterectomies.¹ Hysterectomy is the second most common major operation in obstetrics and gynaecological practice after caesarean section, with more than 600,000 women undergoing hysterectomy per year in the United States alone.²

Total abdominal hysterectomy is widely reported as the most common type of hysterectomy performed for benign uterine diseases but, with the introduction of laparoscopy to gynaecology practice and the development of alternative treatments for common indications, the trend may be changing for both the indications and the routes through which hysterectomies are performed.^{2,3} Our primary objective was to review the rate, types, indications and complications of hysterectomy performed for benign indications in Enugu State University Teaching Hospital, Nigeria.

METHODS AND MATERIALS

This was a retrospective cross-sectional study on the types, indications and complications of benign hysterectomy. It was carried out at the gynaecology wing of the Enugu State University Teaching Hospital, Parklane, Enugu, Nigeria. The study was approved by the institution's ethics review committee. The study objective was to review the types, indications and complications of hysterectomies performed between January 2014 and December 2018 for benign and premalignant gynaecological conditions.

Enugu State University Teaching Hospital maintains a gynaecology operation register: a manual, paper-based record of all theatre gynaecological procedures performed in the hospital. It contains details of the gynaecological procedures undertaken, including the name of patient, the indications for surgery and any complications following surgery. Records are kept in both the theatre and the gynaecology ward. At the end of a procedure, the gynaecology surgeons, anesthesiologists and perioperative nurses complete their respective parts of the register. The gynaecology

ward equally keeps similar records following admission of patients to the ward for surgery. These records were used to obtain relevant data on patients that had undergone hysterectomy.

From the operation register, a list was made of patients that had undergone hysterectomy during the study period, and their case notes retrieved. From these cases, those that met the inclusion criteria were selected. All women aged 15 years and above were included; 15 years is the lower limit of the reproductive age bracket. Women who had undergone peripartum hysterectomy or hysterectomy for pelvic malignancy (gynaecological, gastrointestinal or urological) were excluded. Relevant information on types, indications and complications were analyzed using Statistical Package for Social Sciences (SPSS) software.

Leiomyoma, endometriosis, adenomyosis and dysfunctional uterine bleeding were grouped together as benign indications because of the limited sample size. Leiomyoma are common benign neoplasia arising from transformation of single smooth muscle cells of the uterus. Adenomyosis is the benign invasion of the uterine myometrium by the uterine endometrium. Endometriosis is the presence of endometrial glands and stroma outside the uterus, often in the pelvis. Endometrial hyperplasia and cervical dysplasia were grouped together as premalignant indications. Causes of abnormal uterine bleeding with malignant elements were excluded.

In our study centre, patients for hysterectomy are typically optimized for surgery by the managing team, and certified fit for surgery by the anesthetists before surgery can go on. This optimization includes a satisfactory pre-operative haemoglobin concentration. Patients who received intraoperative blood transfusion due to heavy operative bleeding were considered to have had operative haemorrhage as a complication of surgery. The complications of hysterectomy evaluated in this study were those observed during inpatient admission. Complications noted during follow-up period and other late complications were not included.

RESULTS

Out of 160 hysterectomies reviewed, 75 were jettisoned due to deficient clinical details, insufficient information or missing case records. A further 24 did not meet the inclusion criteria, leaving 61 to be analyzed.

The mean age of the patients was 54 years (mean, SD 53.69 ± 11), with almost even

distribution between those aged 50 years or above and those below 50 years. Of the hysterectomies, 51% (31/61) were in the high parity women, while 12% were in nulliparas women (Tables 1 and 2). More than 70% of the hysterectomies were performed via the abdominal route with total abdominal hysterectomy (TAH) most common (67.2%).

Table 1 Types, indications and complications of hysterectomy

Variables	Frequency (n)	Percent (%)
Type of hysterectomy		
Total abdominal	41	67%
Subtotal	2	3%
Vaginal	18	30%
Oophorectomy		
Yes	23	38%
No	38	62%
Anaesthesia used		
General	29	48%
Spinal	13	21%
Epidural	19	31%
Indication		
Premalignancies	13	21%
Benign conditions	27	44%
Pelvic organ prolapse	18	30%
Gestational Trophoblastic Disease (GTD)	2	3%
Chronic pelvic pain	1	2%
Complications		
Excessive intra-op haemorrhage	6	10%
Trauma to bladder	1	2%
Pyrexia	4	7%
Wound infection	2	3%
Pelvic abscess	1	2%
Gut injury	1	2%
Mortality	1	2%
Duration on admission (days)		
≤7	47	77%
≥8	14	23%

Table 2 Indications disaggregated by patient's characteristics

Variables	Premalignancy freq (%)	Benign conditions freq (%)	Pelvic organ prolapse freq (%)	GTD freq (%)	Chronic pelvic pain freq (%)
Age					
≤ 50	7 (54%)	19 (70%)	1 (6%)	2 (100.0)	1 (100.0)
≥ 51	6 (46%)	8 (30%)	17 (94%)	0 (0.0)	0 (0.0)
Marital status					
Married	13 (100)	24 (89%)	18 (100.0)	2 (100.0)	1 (100.0)
Single/Widowed	0 (0.0)	3 (11%)	0 (0.0)	0 (0.0)	0 (0.0)
Education level					
≤ Primary	5 (38.5)	13 (48%)	18 (100.0)	0 (0.0)	1 (100.0)
≥ Secondary	8 (61.5)	14 (52%)	0 (0.0)	2 (100.0)	0 (0.0)
Occupation					
Farmer	0 (0.0)	3 (11%)	14 (78%)	0 (0.0)	0 (0.0)
Civil Servant	8 (61.5)	11 (41%)	1 (5%)	1 (50.0)	0 (0.0)
Trader	5 (38.5)	13 (48%)	3 (17%)	1 (50.0)	1 (100.0)
Parity category					
Nullipara	1 (8%)	5 (19%)	1 (5%)	0 (0.0)	0 (0.0)
1-4	6 (46%)	12 (44%)	3 (17%)	2 (100.0)	0 (0.0)
> 4	6 (46%)	10 (37%)	14 (78%)	0 (0.0)	1 (100.0)
PCV pre-op					
≤ 30	6 (46%)	13 (48%)	1 (5%)	2 (100.0)	0 (0.0)
≥ 31	7 (54%)	14 (52%)	17 (95%)	0 (0.0)	1 (100.0)
Intra-op transfusion					
Yes	2 (15%)	3 (11%)	1 (5%)	0 (0.0)	0 (0.0)
No	11 (84%)	24 (88%)	17 (95%)	2 (100.0)	1 (100.0)
Hysterectomy type					
Abdominal	13 (100.0)	27 (0.0)	0 (0.0)	2 (100.0)	1 (100.0)
Vaginal	0 (0.0)	0 (0.0)	18 (100.0)	0 (0.0)	0 (0.0)
Anaesthesia used					
GA	6 (46%)	16 (59%)	5 (28%)	2 (100.0)	0 (0.0)
Spinal	1 (8%)	3 (11%)	9 (50%)	0 (0.0)	0 (0.0)
Epidural	6 (46%)	8 (30%)	4 (22%)	0 (0.0)	1 (100.0)
Duration on admission					
≤ 7	9 (69%)	19 (70%)	16 (90%)	2 (100.0)	1 (100.0)
≥ 8	4 (31%)	8 (30%)	2 (11%)	0 (0.0)	0 (0.0)



The choice of general versus local anaesthesia was almost equal for all the hysterectomies (48% vs 52% respectively). Of the local anaesthetics, epidural was employed more often than spinal (31% vs 21%).

Benign conditions (leiomyoma, adenomyosis and dysfunctional uterine bleeding) were the most common reason for hysterectomy, accounting for 44% (27/61) of cases. Most of the patients with this category of disease were ≤ 50 years old and were more likely to be professional workers (Table 2). Pelvic organ prolapse (POP) was also relatively common, accounting for 30% (18/61) of the hysterectomies. Chronic pelvic pain (CPP) was less common, contributing just one hysterectomy to the included cases. Most patients who had pelvic organ prolapse (POP) were above 50 years and were more likely to be poorly educated farmers with high parity (Table 2).

Four out of five (80%; 4/7/61) of the patients had a short hospital stay of ≤ 7 days. Two-thirds of those who stayed beyond 7 days had hysterectomy for leiomyoma, adenomyosis and dysfunctional uterine bleeding. This category also contributed 50-60% to those who had intraoperative blood transfusion, and preoperative haematocrit concentration of $\leq 30\%$ respectively (Tables 1 and 2). Heavy haemorrhage during surgery, necessitating intraoperative transfusion, was encountered in 6 cases. The rates of bladder injury, gut trauma and mortality were in the range of 1-2%. There was no record of conversion from vaginal to abdominal surgery.

The vaginal approach was used unequivocally for only one indication – pelvic organ prolapses (Tables 1 and 2). There was no record of laparoscopic hysterectomy (LH) or laparoscopically assisted vaginal hysterectomy (LAVH). Oophorectomy was performed in addition to hysterectomy in 26/61 cases (38%).

DISCUSSION

We found that 51% of the hysterectomies were in patients of higher parity. It could be that women who had completed their family size would more readily accept hysterectomy than those who hoped to have more children. Secondly, conditions such as pelvic

organ prolapse, adenomyosis and chronic pelvic pain, which are common indications for hysterectomy, occur more commonly with increasing parity. This finding conforms with findings by other researchers.^{4,5} On the other hand, 12% of the hysterectomies were in nulliparous women. This is quite high, especially when we consider that gynaecologists give great priority to conserving reproductive capacity; it is more than twice the rate of 5.1% reported by Ahmed and Taiwo (2015)⁶. However, that study considered both malignant and benign hysterectomies which might have accounted for the difference by widening the indications for hysterectomy. The pursuit of higher education and career goals with consequent delaying of childbearing would potentially predispose nulliparous women to leiomyoma and abnormal uterine bleeding. Our findings of leiomyoma, abnormal uterine bleeding and pelvic organ prolapse among the most common indications for hysterectomy was not surprising but rather agreed with other researchers such as Wu et al. (2007) in their retrospective nationwide study of women in the United States². Risk factors that have been consistently demonstrated to be strongly associated with POP are age, higher vaginal parity and engagement in manual work such as farming and heavy lifting^{6,7} especially in developing countries where such activities are meant to support the family's economy. We found the bulk of the patients with POP to be predominantly older farmers with higher parity. These risk factors are known to be associated with weakening, stretching and tearing of the pelvic floor.

The prolonged hospital stays in those who had leiomyoma, adenomyosis and dysfunctional uterine bleeding could be due to the number of days needed to correct anaemia, and the fact that most had hysterectomy by the abdominal route which has been associated with longer hospital stay, higher infection rates and a slower return to normal activities.⁸

Nearly 90% of hysterectomies are performed for benign indications and they are generally safe, with complication rates ranging from 3-9% reported.^{9,10} The route of surgery, indications for surgery, previous

pelvic surgeries, and the experience of the surgeon are some of the factors that influence the rates of complications of benign hysterectomy.^{11,12} The influence of these factors was not part of the scope of this study but the rates for the different complications we observed (such as 1-2% genitourinary injury, gut trauma and mortality) were comparable to the findings by other researchers.^{9,10}

Our study was observational and retrospective, and limited by a small sample size, but its principal findings agreed with findings from similar studies. It is generally accepted that a major weakness of retrospective studies is that they generate a great deal of missing data but, on the other hand, the findings we made could form the bases for future prospective studies, especially on methods of storing medical information. The details of nearly half of the hysterectomies could not be incorporated into the data for analysis due to reasons related to missing or incomplete records. This highlights the weakness of manual medical records and the potential benefits of

electronic medical record (EMR) systems, especially in developing countries. We were unable to calculate the hysterectomy rate. This was due to difficulties in getting an accurate denominator, occasioned by incomplete medical records. We were equally unable to evaluate the effects of the route of surgery, expertise of surgeon and patients' characteristics on the occurrence of complications.

CONCLUSION

In conclusion, benign indications such as leiomyoma and adenomyosis are common reasons for benign hysterectomy. Benign hysterectomies are safe with minimal complication rates. The abdominal route remains the most popular route for benign hysterectomies in our environment, although surgeons seemed to prefer the vaginal approach for POP in particular.

To avoid losses associated with medical information stored in papers, a more reliable means of storing medical information should be considered.

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