PREVALENCE, INDICATION, TYPE AND COMPLICATION OF ELECTIVE HYSTERECTOMY IN A TERTIARY HOSPITAL IN ETHIOPIA

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ABSTRACT

BACKGROUND: Hysterectomy is a surgical removal of the uterus. It is one of the commonly performed surgical procedures worldwide. In obstetric and gynecologic context, it is the second to cesarean section. The aim of this study was to analyze the rate, indications, complications, and type of elective hysterectomy in Ayder comprehensive specialized hospital.

METHODOLOGY: Retrospective study of all women for whom elective hysterectomy was done from January 2009-December 2016 in Ayder Comprehensive Specialized Hospital.

RESULTS: A total of 385 elective hysterectomies were done out of 1058 major gynecologic surgeries during the study period. This makes a rate of hysterectomy of 36.4%. Majority of the cases were in the age group of 41-50 years (31.6%) with the mean age of 47.5 years. The leading indication for elective hysterectomy was uterovaginal prolapse184 (57.3%), followed by leiomyoma 48 (15%) and ovarian tumor 47(14.6%). Vaginal hysterectomy was the commonest route of surgery 159(49.5%) followed by total abdominal hysterectomy (TAH) 75(23.4%). Half of the patients who had elective hysterectomy had pain during their hospital stay and 36.4 % of them were anemic after the operation.

CONCLUSION: The rate of elective hysterectomy was 36.4% of all major gynecologic surgeries during the study period and more than half the indication was done for uterovaginal prolapse. Post-operative surgical site pain was the most common complication identified in about half of the cases during the study period.

KEY WORDS: Total abdominal hysterectomy, vaginal hysterectomy, Uterovaginal Prolapse, Leiomyoma, Ovarian tumor

(Ethiopian Journal of Reproductive Health; 2019; 3;1-7)

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INTRODUCTION

Hysterectomy is a surgical removal of the uterus. It is one of the commonly performed surgical procedures worldwide. Hysterectomy is a major surgical procedure, which is done either under general or regional anesthesia. It can be done in different modalities. The distributions of the different surgical approaches are abdominal (64 %), vaginal (22 %), and laparoscopic (14 %) [1].

In developing countries, the commonest indication for hysterectomy remains uterine fibroid with or without menorrhagia, which is similar to that in developed countries except that uterine fibroid is generally larger and patients usually present late. Other indications include dysfunctional uterine bleeding, pelvic organ prolapse, adenomyosis, cervical polyp, premalignant lesions of the uterus and cervix after completion of family size, endometrial cancer, cervical cancer and chronic pelvic pain.

Complications that may occur following hysterectomy include hemorrhage, infection and injury to adjoining structures such as ureter, bladder and bowel. These complications could lead to severe morbidity and even mortality [1,2,3, 4, 5].

OBJECTIVE

The objective of this study was to analyze the rate, indications, complications, and type of elective hysterectomy in Ayder comprehensive specialized hospital.

METHODS

The study was conducted in Ayder Comprehensive Specialized Hospital, which is located in Mekelle town, Tigray, Ethiopia. The hospital is a teaching hospital for both undergraduate and postgraduate students and has 24 hours a day specialty care. It began its service in 2008 and gives service close to 8 million people living in the northern part of Ethiopia.

The study included all women who had elective hysterectomy and patient charts were retrieved from the archives. Data of important variables was collected from the patient documents. Data were cleaned, entered, and analyzed using IBM SPSS version 20. Descriptive analysis was used to estimate magnitude, indication, type and complication of elective hysterectomy. Ethical clearance was obtained from the research and community service committee of College of Health Sciences, Mekelle University.

RESULTS

A total of 385 elective hysterectomies were done out of 1058 major gynecologic surgeries during the study period. This makes a rate of elective hysterectomy of 36.4%. From the total of elective hysterectomies 321(83.4%) cards were retrieved and analyzed.

Majority of the cases 102(31.6 %) were in the age group of 41 – 50 years with a mean age of 47.5 years. Most of the cases (81.6 %) were from rural area. Most of the surgery were done for grand multipara (48.6%) followed by multiparous (46.7%) and nulliparous (4.7%). (Table-1)

Tables

Table-1. Sociodemographic and reproductive history of patients with elective hysterectomy, January 2009-December 2016 in Ayder Comprehensive Specialized Hospital, Northern Ethiopia

Variable	Number	Frequency (%)
Age (years)		
21-30	29	9
31-40	80	24.9
41-50	102	31.8
51-60	73	22.7
61-70	31	9.7
71-80	5	1.6
>81	1	0.3
Total	321	100
Residence		
Urban	59	18.4
Rural	262	81.6
Total	321	100
Parity		
0	15	4.7
1-4	150	46.7
>4	156	48.6
Total	**321**	**100**

The leading indication for elective hysterectomy was uterovaginal prolapse (UVP) 184(57.3%), while leiomyoma 48(15%) was the second most common indication followed by ovarian tumor (14.6%) (Table-2).

Table-2 Indication of elective hysterectomyJanuary 2009-December 2016 in Ayder Comprehensive Specialized Hospital, Northern Ethiopia

Indication	Number	Percent
UVP	184	57.3
Leiomyoma	48	15
Ovarian tumor	47	14.6
GTD	19	5.9
Cervical cancer	9	2.8
Endometrial hyperplasia	4	1.2
Endometrial cancer	3	0.9
Leiomyosarcoma	2	0.6
CIN II and CIN III	2	0.6
Elongated cervix	2	0.6
Adenomyosis	1	0.3
Total	**321**	**100**

From all the cases with elective hysterectomy, vaginal hysterectomy constituted the major route of surgery during the study period 159 (49.5%) followed by total abdominal hysterectomy (TAH) 75 (23.4%). Total abdominal hysterectomy with bilateral salpingeo-oopherectomy (BSO) was done for 51 (15.8%), the remaining type of elective hysterectomies were subtotal abdominal hysterectomy 18 (5.6%), radical hysterectomy and total abdominal hysterectomy with unilateral salpingeo-oopherectomy (USO) each contributing 9 (2.8%)(Table-3).

Table-3 Type of hysterectomy done for elective hysterectomy patients from January 2009 - December 2016 in Ayder Comprehensive Specialized Hospital, Northern Ethiopia

Type of hysterectomy	Frequency	Percent
Vaginal hysterectomy	158	49.2
TAH	76	23.6
TAH+BSO	51	15.8
Subtotal hysterectomy	18	5.6
TAH+USO	9	2.8
Radical hysterectomy	9	2.8
Total	**321**	**100**

During the study period, 156 (84.2%) cases of uterovaginal prolapse undergone vaginal hysterectomy and the remaining cases had subtotal or total abdominal hysterectomy with suspension procedures.

Thirty nine (81.3 %) cases of leiomyoma have undergone TAH. Five (10.4 %) cases have undergone TAH with USO. Two cases (4.2 %) had TAH and BSO and one case (2.1%) had sTAH, vaginal hysterectomy was done on a patient with delivered myoma and UVP.

All of the ovarian tumor patients have undergone TAH +BSO. From the 19 gestational trophoblastic disease 18(94.7%) had TAH while the remaining one patient undergone TAH +USO after intraoperative injury to one ovary. Nine radical hysterectomies were done for the patients with early stage cervical cancer. (Table-4)

Table-4: Frequency and percentage distribution of type of elective hysterectomy and their indication, January 2009-December 2016 in Ayder Comprehensive Specialized Hospital, Northern Ethiopia

	Type of elective hysterectomy						
Indication	TAHs	TAH	VH	RH*	TAH+BS	TAH+USO	Total
UVP	10	16	156	0	2	0	184
Leiomyoma	39	1	1	0	2	5	48
Ovarian tumor	0	0	0	0	47	0	47
GTD	18	0	0	0	0	1	19
Cervical cancer	0	0	0	9	0	0	9
Endometrial hyperplasia	3	0	0	0	1	0	4
Endometrial cancer	1	0	0	0	1	1	3
CINII and CIN III	1	0	0	0	0	1	2
Leiomyo-sarcoma	2	0	0	0	0	0	2
Elongated cervix	1	0	1	0	0	0	2
Adenomyosis	1	0	0	0	0	0	1
Total	**76**	**17**	**158**	**9**	**53**	**8**	**321**

Twelve (3.7%) patients had intra operative bleeding of more than 1000ml. Among these 12 cases three have undergone radical hysterectomy for cervical cancer. Two for each cases of leiomyoma, ovarian tumor, UVP and GTD ended up intraoperative bleeding of more than 1000ml. One patient, who ended up with bleeding of more than 1000ml, was diagnosed with endometrial cancer.

Three patients had adjacent organ injury. Two patients have sustained bladder injury and one ended up in ureteric injury. One patient ended up with a bladder injury while undergoing vaginal hysterectomy for UVP. The other bladder injury occurred during total abdominal hysterectomy for leiomyoma. The patient who had ureteric injury was undergoing subtotal abdominal hysterectomy for leiomyoma with previous cesarean scar with extensive adhesion. (Table-5)

Table-5: Intraoperative and postoperative complications of elective hysterectomy January 2009-December 2016, Ayder Comprehensive Specialized Hospital, Northern Ethiopia

Complication	Frequency	Percent
AIntraoperative complication		
Hemorrhage	12	3.7
Bladder injury	2	0.6
Ureteric injury	1	0.3
None	306	95.3
Total	321	100
Postoperative Complciations		
Fever	14	4.4
Post-operative pain	163	50.8
Anemia	117	36.4
Paralytic ileus	18	5.6
UTI	35	10.9
Wound infection	12	3.6
Transfusion	15	4.7
RTI	8	2.5
Vault prolapse	4	1.2
Repeat laparotomy	3	0.9
DVT	2	0.6
Vault hematoma	1	0.3
Death	0	0

Half the patients who were followed postoperatively complained surgical pain per documentation on progress note otherwise it was difficult to assess objective score. From the listed type of hysterectomy, post vaginal hysterectomy surgical site pain contributed the highest of all procedures 68(41.7%) followed by TAH 41(25.2%) and TAH +BSO 6(3.8%).

One hundred seventeen (36.4%) patients were anemic after the surgery. Post-operative hemoglobin was evaluated from the study groups. Fifty one (43.6%) patients are after vaginal hysterectomy followed by TAH 28(23.9%).The remaining are presented on table 6 with type of indication and anemia

A blood transfusion was required post operatively in 15 patients (4.7%).Most of the transfusion was given on the patients operated with vaginal hysterectomy 5(33.6%) and total abdominal hysterectomy 4 (26.7%). The remaining transfusion was given for the patients who were operated with radical hysterectomy 2(13.3 %), TAH+BSO 3(20%) and TAH+USO 1(6.7%).Two of the patients required repeat laparotomy to identify and treat the cause of bleeding.

Three of the patients ended up in explorative laparotomy after vaginal hysterectomy. All of the patients had intraabdominal bleeding during post-operative follow up

Four patients developed vault prolapse after vaginal hysterectomy. All of them came with mass protruding per vagina after they had been discharged with improved symptoms.

Table 6: frequency and percentage of anemia with indication of hysterectomy

Type of indication	Frequency	percent
UVP	54	46.2
Ovarian tumor	22	18.8
leiomyoma	19	16.2
GTD	12	10.3
Cervical cancer	5	4.3
Endometrial hyperplasia	2	1.7
CIN1 and CIN II	2	1.7
Endometrial cancer	1	0.8
Total	**117**	**100**

Deep venous thrombosis

Two (0.6%) patients developed deep venous thrombosis after TAH and TAH+BSO.

DISCUSSIONS

Hysterectomy is the second most common surgical procedure performed on women. Indications for hysterectomy vary across different regions of the world [6, 7, 8, 9,10,11,12]. In our study at Ayder comprehensive specialized hospital, the commonest indications for elective hysterectomy were Uterovaginal prolapse184 (57.5%), Leiomyoma 48 (15%) and ovarian tumor 47 (14.6%).The three major indications for hysterectomy in Tikur Anbessa hospital among 969 women were leiomyoma 396 (41.1%), uterovaginal prolapse 221 (23%) and ovarian tumors 188 (19.5%)[2] . In Nigeria a study involving about 196 hysterectomies, uterine myoma was the commonest indication in 62.3% followed by Utero vaginal prolapse 16.3% [6]. In India, most common indication for hysterectomy was symptomatic fibroid uterus (= 210 [39.9%]), followed by uterovaginal prolapse (= 86 [16.3%]) [13]. In USA uterine myoma was found to be the commonest indication in 32.4%, followed by abnormal vaginal bleeding in 16.6%. Other indications include genital organ prolapse, endometriosis, chronic pelvic pain and precancerous lesion in 12.2%, 11.9%, 7.1% and 4.3% respectively [14]. In our set up, the leading indication for elective hysterectomy was found to be uterovaginal prolapse. This increment could be due to free campaign organized and given by Ayder comprehensive specialized hospital for the patients with uterovaginal prolapse living in the rural and urban areas. The other reason could be due to higher incidence of parity and home deliveries in the study arrears.

IIn Ayder comprehensive specialized hospital the major types of hysterectomy were vaginal hysterectomy 159(49.5%), followed by total abdominal hysterectomy and TAH+BSO 51(15.9%).A retrospective analysis of 969 elective hysterectomies performed at Tikur Anbessa teaching hospital from February 1992-October 2000 showed that there was a preference for the abdominal approach to hysterectomy (77.3%) with vaginal hysterectomy being done in only 22.7 %5 .Retrospective studies of all the women attending Fakhruddin Ali Ahmed Medical College in India from March 2012 to February 2014 and requiring hysterectomy for benign and premalignant conditions. Total 270 hysterectomies were performed during the study period of which 70 (32.22%) were vaginal hysterectomy with pelvic floor repair, 17 (11.47%) were non-descent vaginal hysterectomy, 5 (1.85%). Hysterectomies were done laparoscopically and 178 (65.93%) were total abdominal hysterectomies[15].

The major route of elective hysterectomy in our set up was vaginal hysterectomy which had comparable approach on the study done at FAA Medical College. This was due to major indication on both hospitals were uterovaginal prolapse. However compared to Tikur Anbessa hospital, abdominal approach was preferable owing to higher incidence of Leiomyoma in this hospital.

There was comparable result on bladder injury (2patients) and ureteric injury (1 patient) from the study done in An Audit of Indications, Complications, and Justification of Hysterectomies at a Teaching Hospital in India[16].

In our hospital the intraoperative hemorrhage was documented on the operation note 94/321(30%). Out of these 37 patients had estimated blood loss of less than 300ml (11.5%) while 45 patients had 301-1000ml (14%) and 12 patients (3.7%) more than 1000 ml. From these patients only 15 (4.7%) were transfused. In Tikur Anbessa hospital Intraoperative hemorrhage rate was 135/969 (14%)[13]. This lower rate in our set up can be explained by 70% undocumented intraoperative estimated blood loss on the chart. However, there was higher incidence of anemia on the patients with normal hemoglobin after the operation.

Regarding postoperative course, 163 (50.8%) patients complained pain during the hospital stay. But it was difficult to assess objective score of pain as there was no documentation. However, most of the pain compliant was after vaginal hysterectomy 68 (41.7%) with and TAH 41 (25.2%). 117 patients (36.4%) are anemic after the surgery. Fifty one (43.6%) patients are after vaginal hysterectomy followed by TAH 28 (23.9%).This was less than from Tikur Anbessa hospital study which may be explained by poor intraoperative documentation.

There was no pulmonary thromboembolism, cardiovascular accident or death during the study period as compared to Hysterectomy in the Niger Delta of Nigeria. There were 6 deaths during the study period giving a case fatality rate of 3.9 %[2].

CONCLUSION

The rate of elective hysterectomy is 36.4%. Most of the indications are done for uterovaginal prolapse (57.3%), leiomyoma (15%) and ovarian tumor (14.6%). The surgery was done in the age group of 41-50 year (31.8%). The commonest route surgery were vaginal hysterectomy (49.5%) followed by TAH (22.4%) and TAH +BSO (15.9%). Nearly half of the patients complained pain during the hospital stay. One hundred seventeen patients (36.4%) are anemic after the surgery.

COMPETING INTERESTS

The authors declare that they have no competing interests.

Ethics approval and consent to participate

Mekelle University, College Health Sciences, Ethical review committee approved this study.

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