

A Retrospective Review: Vaginal versus Abdominal Hysterectomy for Benign Gynecological Diseases in a Tertiary Center

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Abstract

The aims are to review respectively 229 cases of hysterectomy and to find the factor affecting the decision of vaginal hysterectomy. Data collected from medical charts include age, nationality, parity, menopause, history of Dilation and curettage. The following data were obtained: the clinical presentation and the indication for hysterectomy. Postoperative complication includes the estimated blood loss, the number of days in hospital and ICU admission recorded. The route of hysterectomy found that 187 (82%) were abdominal and only 42 (18%) were vaginal. Factors significantly associated with the choice of vaginal approach: age, parity, smaller uterine size and prolapse. Factors affecting the decision of vaginal hysterectomy for treatment of benign diseases are identified as follows: if the age is more than 35 years or if the women already reach menopause, the presenting symptoms are not vaginal bleeding but prolapsed uterus and uterine size is less than 12 weeks.

Keywords

Vaginal, Abdominal, Hysterectomy

1. Introduction

Hysterectomy is one of the commonest major procedures carried out on female patients. Hysterectomy is the ultimate treatment for many gynecological diseases especially in older patients or patients who completed their family. The annual estimation

of hysterectomies performed is 600,000 in US and 40,000 in England [1]. By the age of 64, about 40% of all women worldwide will have a hysterectomy, and it is mainly performed for improvement in symptomatology and quality of life. Vaginal hysterectomy (VH) should be used in preference to the laparoscopic or abdominal approaches for benign indications as recommended by the American College of Obstetricians and Gynecologists (ACOG) [2].

This was announced following the publication of a recent meta-analysis from the Cochrane Collaboration, reporting that vaginal route has less postoperative pain and reduced recovery time [3].

Still, the rates of hysterectomies carried out vaginally are low. Nulliparity, previous abdominal surgery and the need of experience are reported as causes for favoring the abdominal approach by most surgeons [4]. In a systematic review done in 2014, it was reported that the most common approach used in hysterectomies was the abdominal approach except when the uterovaginal prolapse is the pathology involved [1].

In a 2005 local study, it showed that vaginal route was being used only for prolapse cases [5]. A previous study was done in our center on 2008 reported that the abdominal approach is more commonly used than vaginal [6]. In China, the vaginal approach is the most common method used overall [7]. On the other hand, abdominal hysterectomy (AH) remains the main surgical route of hysterectomy for patients with uterine leiomyomas. There are limited data in our country reviewing factors influencing the selection of the route for hysterectomy and the incidence of complications after each in comparison to the literature.

The aim of this study was to evaluate the adherence to our practice of hysterectomy to the general guidelines, providing data that could be used for the future audit.

2. Methods and Patients

A retrospective medical charts review of all cases of hysterectomy performed at King Abdulaziz University Hospital (KAUH), it is a tertiary teaching hospital with a capacity of 850 beds Department of Obstetrics and Gynecology 180 beds, from January 2010 to May 2014, and ethical approval obtained from the ethical hospital committee.

Two hundred and twenty-nine cases had a hysterectomy. The data collected from medical record charts including: age in years, nationality (Saudi or Non-Saudi), parity, and also the past medical and surgical history and menopausal status. Their clinical presentation is as follows: vaginal bleeding, abdominal pain, abdominal swelling, and prolapsed.

The data recorded were indication for hysterectomy, estimated blood loss, postoperative complication, route of hysterectomy, type of anesthesia and number of days in the hospital as well as and the number of patients admitted to ICU.

Inclusion Criteria: 1) Patients admitted with a diagnosis of benign disease of the uterus, 2) for hysterectomy, 3) managed at KAUH.

Exclusion criteria: 1) hysterectomy done for malignant diseases, 2) during cesarean section, 3) laparoscopic hysterectomy, 4) cases transferred another facility, 5) or if their

chart was incomplete.

The Statistical Package for the Social Sciences (PC SPSS) used to analyze data using different methods of statistical analysis to correlate between vaginal versus abdominal hysterectomy

The primary variables are hysterectomy for treatment of benign disease 0 for vaginal hysterectomy 1 for abdominal hysterectomy. Variables used age in years, nationality Saudi and non-Saudi, parity, menopause or not, past medical history, past surgical history, presenting symptom bleeding or otherwise, prolapse or otherwise, and utrine size less than 12 cm or larger ($\text{sig} < 0.05$). Odds ratio and 95% Confidence Interval were used to present the results.

Authors have no conflict of interests, and the work was not supported, or funded by any drug company.

3. Results

Total number of cases of hysterectomy was 229 cases. The range of age is 25 to 84 years with a mean of (51.9 ± 9.5) . The range of party was 0 to 14 with a mean (4.1 ± 3.4) . Out of 229 patients, had the hysterectomy in the study period for benign conditions 187 (81.7%) were the abdominal approach and 42 (18.3%) were vaginal approach (**Table 1**).

The indications for hysterectomy are illustrated in **Table 2**.

Out of the 99 patients with a diagnosis of a fibroid, 97 cases had the abdominal hysterectomy and only two cases done vaginally. From 36 cases done for uterine prolapse, the majority were performed vaginally in 30 (83%), and abdominal approach used in

Table 1. Percentage of vaginal hysterectomy.

Routs	Number	Percentage
Vaginal hysterectomy	42	18.3%
Abdominal hysterectomy	187	81.7%
Total	229	100%

Table 2. Indication for surgery.

Indication	Vaginal	Abdominal	Total	Percentage
Uterine fibroid	2	97	99	43.2%
Prolapse	30	6	36	15.7%
DUB	3	20	23	10.1%
Ovarian cysts	1	20	21	9.2%
PMB	3	17	20	8.7%
Endometrial hyperplasia	1	16	17	7.4%
Endometriosis	1	9	10	4.4%
Others	1	2	3	1.3%
Total	42	187	229	100

DUB: Dysfunctional Utrine Bleeding. PMS: Post Menapousal Bleeding.

6 (17%). The ultrasound reports showed that in (39%) cases there were only one fibroid, and (61%) cases had multiple fibroids. The size of fibroid ranged from 5 - 17 cm with a mean of (7 ± 3.7) .

Of those who had a vaginal hysterectomy, 20 cases (47.6%) also had anterior/posterior repair. Tension-free vaginal tape (TVT) was applied in three (7%) these cases.

In the abdominal approach cases, Transverse incision was used in 139 (74.4%) cases, Midline incision in 36 (19%) cases, and Maylard incision in 11 (6%) cases and supra-umbilical midline was used in one case (0.5%)

7.4% was postoperative complication rate, 1.7% occurs in the vaginal hysterectomy group and 5.7% in the abdominal hysterectomy group. Although the rate is higher in the abdominal group, this difference is not statistically significant (**Table 3**).

Thirty-five (18.7%) cases of the abdominal group had adhesions. Mild Adhesions were found to be in 14 (7.6%) cases, moderate in 4 (2.2%) cases and severe in 17 (9.2%) cases. The drain was applied on 46 (24.6%) of the abdominal cases. In the abdominal group, total hysterectomy was performed in 175 (93.5%) cases and subtotal in 12 (6.5%). One or both ovaries were preserved in 33 (78.5%) of vaginal cases, and both were removed in 9 (21.5%) cases. Only 59 (31.5%) cases from the abdominal group had preserved at least one ovary, and concomitant bilateral oophorectomy was done in 128 (68.5%) cases.

Post-operative measures including the average estimation of blood loss, from 100 ml to 6000 ml with a mean of (561.5 ± 614.4) and length of hospital stay after surgery are ranged from 2 to 19 days with a mean of (4.3 ± 2.5) . Complications rate in both vaginal and abdominal approach are in **Table 3**. However, the difference in the complications rate between both groups statistically non-significant ($P = 0.7$). Three cases were admitted to the intensive care unit from the abdominal group. Packed RBCs were transfused in 23 (12%) cases from the abdominal group, and only two (5%) cases from vaginal group, the difference is not statistically significant ($P = 0.2$).

Factors affecting the decision of vaginal hysterectomy for treatment of benign diseases if the age is more than 35 years (OR = 0.306; 95% CI {0.147 - 0.834}; $P < 0.001$). Menopause (OR = 0.160; 95% CI {0.075 - 0.339}; $P < 0.001$) or the presenting symptoms is not vaginal bleeding (OR = 0.117; 95% CI {0.052 - 0.260}; $P < 0.001$), prolapsed uterus (OR = 39.485; 95% CI {15.844 - 98.400}; $P < 0.001$), and uterine size is less than 12 cm

Table 3. Complication.

Complication	Vaginal (Rate)	Abdominal (Rate)	Total (Rate)
None	38 (16.6%)	174 (76.0%)	212 (92.6%)
Complication	4 (1.7%)	13 (5.7%)	17 (7.4%)
Total	42 (18.3%)	187 (81.7%)	229 (100%)
Urinary complication	2 (0.9%)	5 (2.1%)	7 (3.0%)
Wound infection	0 (0.00%)	6 (2.6%)	6 (2.6%)
Thrombo-embolic	1 (0.45%)	1 (0.45%)	2 (0.9%)
Others	1 (0.45%)	1 (0.45%)	2 (0.9%)

(OR = 0.770; 95% CI {0.712 - 0.834}; P < 0.001) (**Table 4**).

4. Discussion

The abdominal route was the most common technique used in the hysterectomy; an approach correlated with a higher rate of complications. Previous studies from Saudi Arabia [6], South Africa [8], UK and USA as reported from a 2014 systematic review showed similar finding [1].

In contrast to other studies from Germany [9], France [10], and Finland [11] more hysterectomies are performed vaginally than abdominally. Previous studies [6] [8] [9] reported that vaginal approach mainly used in patients with uterine prolapse that is similar to our results.

Ovarian preservation is common in the vaginal hysterectomy, this might be a reason

Table 4. Comparison of vaginal and abdominal hysterectomy.

	VAGINAL	ABDOMINAL	OR. 95% Confidence Interval	P
AGE				
LESS 35	12	106		
MORE 35	30	81	0.306 (0.147 - 0.834)	<0.001
Nationality				
Saudi	22	96		
None Saudi	20	91	1.043 (0.534 - 2.038)	<0.520
Parity				
<4	10	68		
>4	32	119	0.647 (0.253 - 1.181)	<0.083
Menopause				
No	11	129		
Yes	31	58	0.160 (0.075 - 0.339)	<0.001
Past medical H				
No	19	101		
Yes	23	86	0.703 (0.359 - 1.378)	<0.195
Past surgical H				
No	34	147		
Yes	8	40	1.156 (0.496 - 2.694)	<0.460
Bleeding				
Yes	9	131		
No	33	56	0.117 (0.052 - 0.260)	<0.001
Prolapsed				
Yes	29	10		
No	13	177	39.485 (15.844 - 98.400)	<0.001
Uterine size				
<12	42	141		
>12	0	46	0.770 (0.712 - 0.834)	<0.001
Total	42	187		

to influence the selection of the route. Although the ACOG recommends that's, the vaginal route should be preferred regardless of the decision of concomitant oophorectomy [2].

Aspects that need further evaluation and adjustments for the risk of complications include the patients' age, indications for surgery. For example, primarily, the rate of complications with vaginal hysterectomy is less than that after abdominal hysterectomy in this study which might be explained by the presence of prolapsed uterus which makes the operation easier, since more than ninety percent of vaginal hysterectomies are performed for patients with a prolapsed uterus. It was also reported 2014 [12].

Secondly, Wound infection was the most common complication especially reported in the abdominal group; however, this could be related to higher BMI of patients that were not calculated in this study. Further studies are highly needed to evaluate the reasons for the reluctance of gynecology surgeons in performing vaginal hysterectomy.

In a study done in Germany, operative complications were recorded in (5.5%) cases and postoperative complications in (6%) of cases. Operative complications included mainly urinary bladder injuries that occurred more commonly with the vaginal approach. For the postoperative complications, there was no difference between vaginal and abdominal approaches. On the other hand, a 2009 Cochrane review [1] found no difference in the rate of bladder or ureter injuries between abdominal and vaginal hysterectomies. In our study, we found the rate of urinary tract injury more common after vaginal hysterectomy and wound infection after abdominal hysterectomy. However, the difference between two groups was not statistically significant.

In a study done on the morbidity outcomes of 78,577 hysterectomies in Australia [13], complications were slightly higher after VH (9%) in comparison to AH (8%). The postoperative complication rate is similar to the present study and contradictory to a study from South Africa, where postoperative complications reported more commonly in patients undergoing AH ($P = 0.02$).

In our study, an estimated blood loss of 500 ml or more was reported in 105 (56.4%) cases with abdominal approach and in 10 (23.8%) cases with the vaginal approach ($P < 0.001$). A previous Study in Saudi Arabia [6], found similar results but was not statistically significant.

The average duration of postoperative hospitalization was found to be (3.6) following AH and (2.4) after VH days in a recent report from Denmark [9]. In our study, the hospital stay was almost equal for both groups with no statistical significance. The average stay 10.53 ± 5.9 days which reported in a 2015 study [7] for hysterectomy in the management of fibroid, and length of hospital stay was shortest after VH ($P < 0.001$).

In this study, thromboembolic venous events occurred in two (1.3%) cases: one vaginal and one abdominal. This is consistent with a Cochrane meta-analysis, where there was no difference in the incidence of venous thromboembolism between AH and VH.

Null parity was listed by surgeons [4], as one of the reasons to direct the choice toward the AH. In the present study, VH was more familiar with patients who had the higher order of parity.

The average age for women may also affect the method used in a hysterectomy, as reported from Italian study [14] [15]. In the present study, it was that older women undergoing VH.

There were no mortalities recorded in association with hysterectomy for benign indications in a study done in Germany [9]. In our study, one case aged 50 years who was known to have diabetes, and hypertension died ten days following AH for fibroid indication. The patient had severe bleeding that could not be corrected by blood transfusion because of positive antibodies and severe transfusion reaction inducing acute renal failure. In South Africa [9] a 77-year-old overweight woman with hyper-tension developed pneumonia and died from cardiac arrest after VH for uterine prolapse.

We acknowledge the limitations to this study, first the population size being small to present the practice of hysterectomy in our country, further multicenter studies are needed. Second, not all hysterectomy cases included such as cases done laparoscopically.

5. Conclusion

Factors affecting the decision of vaginal hysterectomy for the management of benign diseases are as follows: if the age is more than 35 years or the women has reached the menopause, if they do not present with vaginal bleeding but with uterine prolapsed and if uterine size is less than 12 cm. Vaginal hysterectomy had less postoperative complication, so we advocate that vaginal hysterectomy should be the preferred approach over the abdominal route.

Conflicts of Interests

All authors have no conflicts of interests to declare.

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