

## Complications of Hysterectomy in Iraqi Women in the Department of Obstetrics and Gynecology

Dr. Fadheelah Kadhim Abd Ali<sup>1</sup>, Dr. Samira Mahdi Ismael<sup>2</sup>, and Dr. Diana Khalid Abduali<sup>3</sup>

<sup>1</sup>M.B.Ch.B., D.G.O. \ (Obstetrics and Gynecology), Iraqi Ministry of Health, Najaf Health Department Al-Manathira General Hospital, Najaf, Iraq

<sup>2</sup>M.B.Ch.B., D.G.O. \ (Obstetrics and Gynecology), Iraqi Ministry of Health, Najaf Health Department Al-Manathira General Hospital, Najaf, Iraq

<sup>3</sup>M.B.Ch.B., D.G.O. \ (Obstetrics and Gynecology), Iraqi Ministry of Health, Najaf Health Department Al-Manathira General Hospital, Najaf, Iraq

**Abstract: Background:** Hysterectomy is a common procedure in gynecological practice for the management of benign and malignant conditions. Currently, it has been shown that laparoscopic hysterectomy surgery is better than traditional surgery since it has fewer intraoperative and postoperative complications. **Objective:** This study contributed to determine complications associated with women who underwent laparoscopic hysterectomy. **Patients and methods:** Clinical data were collected for 60 women who underwent laparoscopic hysterectomy from different hospitals in Iraq. The ages of the women ranged between 30-45 years. The study period they were extended from April 8, 2022, to August 25, 2023, which includes diagnostic techniques for women with uterine tumors and operating time. During surgery, estimated bleeding rate, complications, mortality rate, length of hospital stay, women's quality of life, and postoperative pain rate. **Results:** Our study shown clinical and surgical outcomes of women who underwent a laparoscopic hysterectomy, which include women with ages 46–50 were the greatest class who conducted laparoscopic hysterectomy; abnormal vaginal bleeding with 19 cases, pelvic pain with 14 cases, and enlarged uterus with 19 cases; most types of uterine tumors prevalence which are polyps with 30 cases and fibroids with 16 cases; operative time of laparoscopic hysterectomy was 146.14 ± 30.53 minutes; blood transfusion included two women with estimated blood loss was 170.53 ± 146.35 mL; no death cases, admission to the intensive care unit included 2 cases; hospital stays was 2.8 ± 1.3; rate of complications were 9 cases, where early complications included 3 cases and late complications included 6 cases. **Conclusion:** This study indicates that laparoscopic hysterectomy provides clinical successful, which be safer and more effective as an alternative surgery in the treatment of women with tumors.

**Keywords:** Laparoscopic hysterectomy; Postoperative complications; Benign diseases; Quality of life; Gynecological surgical procedures.

### INTRODUCTION

Hysterectomy is one of the most performed gynecological surgeries worldwide. About 600,000 hysterectomies are performed annually in the USA, indicated in 70-90% for benign disease and the rest for oncological causes [Reid, P. C. *et al.*, 2005– Reich, H. *et al.*, 1989]. Total hysterectomy is defined as the resection of the uterus in its entirety, including the body and cervix. There are different ways of approach, from laparotomy, vaginal surgery, and minimally invasive surgery, including in the latter the robotic and laparoscopic way [Nieboer, T. E. *et al.*, 2009; Wright, J. D. *et al.*, 2013]. Laparoscopic hysterectomy was introduced in 2005; since then, this approach has shown multiple benefits associated with the reduction of postoperative pain, such as the requirement of opioid analgesics, hospital stay, and recovery period. Less surgical site infection and better aesthetic results. [Practice Report AAGL, 2011]

Along with caesarean section, hysterectomy is the gynecological surgical intervention that is most widely practiced in developed countries [Dindo, D. *et al.*, 2004]. It is estimated that 600,000 hysterectomies are performed in the United States

every year [Shahid, A. *et al.*, 2011]. Uterine fibroids or leiomyomas are benign, monoclonal tumors of smooth muscle cells found in the uterus. Despite the fact that its cause is still unknown, there is considerable evidence that estrogens and progestogens promote tumor growth. This is because they rarely appear before menarche and their regression after menopause. [Hussain, M. *et al.*, 2012; Drahonovsky, J. *et al.*, 2010]

Nine out of 10 hysterectomies are performed for non-malignant conditions [Practice Report AAGL, 2014]. In 90% of cases, it is due to benign causes where leiomyoma occupies most of the indication in most parts of the world, followed by adenomyosis and pelvic floor defects [Brucker, S. Y. *et al.*, 2014]. The diagnosis of uterine fibroids in most centers is carried out through the clinic and ultrasonography. Symptoms vary and include abnormal uterine bleeding (menorrhagia and hypermenorrhea are the most common pattern of bleeding), pelvic tumor symptoms, pain, and associated infertility in 5 to 10%. [Bernier, E. *et al.*, 2015; Alperin, M. *et al.*, 2012]

Recent studies report that the number and size of fibroids does not determine whether the patient will have menstrual pattern disturbances [Cipullo, L. et al., 2009]. The diagnosis is usually based on the finding of an enlarged uterus with irregular contours to the bimanual examination, establishing the clinical diagnosis in approximately 80 to 95% of cases [Twiijnstra, A. R. et al., 2012]. Transvaginal ultrasound has a high sensitivity for detecting fibroids; this is the most widely used modality due to its availability and cost/effectiveness [Wallwiener, M. et al., 2013]. Magnetic resonance imaging is an excellent method to evaluate the size, position and number of uterine fibroids and is the best modality for the exact evaluation of fibroids with penetration into the myometrium and more accurately predicts the histological characteristics of a tumor. [Yavuzcan, A. et al., 2014 – Harmanli, O. et al., 2013]

## PATIENTS AND METHODS

We conducted a cross-sectional study of patients with uterine tumors, where clinical, surgical, and demographic data were collected before, during, and after laparoscopic hysterectomy surgery from different hospitals in Iraq. The ages of the women ranged between 30 - 45 years. The study period they were extended from April 8, 2022, to August 25, 2023, where the data was included. Clinical and demographic data included age, BMI, symptoms, comorbidities, ASA (%), diagnostic techniques (CT scan, ultrasound), education level, and employment level. Moreover, this study used diagnostic techniques such as CT scans and ultrasound, and the diagnostic data determined the types of tumors in the uterus that women had and the degree of severity of the tumor in the uterus.

Regarding data during surgery, 60 women underwent laparoscopic hysterectomy, as all women underwent surgery under general anesthesia, which included the surgical time, rate of blood loss, number of cases who underwent blood transfusion, tests (systolic and diastolic blood pressure, heart rate), and recovery time. Hospital stay and mortality rate.

Regarding postoperative outcomes, this study determined clinical data for female patients after surgery, which included complications and pain rate, which were distributed using the FAS scale, which ranged from 0 to 10, where 0 represented no pain, while ten was associated with the presence of severe pain in the patient, the duration of recovery, and its severity. The prevalence of symptoms and patient's quality of life through a questionnaire conducted on all patients during the recovery period, which lasted four months, according to the quality-of-life scale, which ranges between (0 - 100), where 0 shows the presence of poor quality of life rates and 100 represents the optimal quality of life, as the standards included both the physical aspect. The psychological aspect, the daily activity aspect, and the emotional and social aspect.

Regarding inclusion and exclusion criteria, this study designed and recorded data and clinical outcomes for women using the SPSES scale, version 22. The inclusion criteria included women who had undergone other abdominal surgery, women between the ages of 30 and 45 years, and women who had undergone previous childbirth operations, while the criteria included Exclusion of patients: women who are older than 45 years of age or women who have other serious diseases.

## RESULTS

**Table 1:** Demographic and preoperative characteristics of women who underwent Laparoscopic hysterectomy

Characteristics	Number of patients [60]	Percentage [%]
Age, years		
30 – 35	9	15%
36 – 40	12	20%
41 – 45	18	30%
46 – 50	21	35%
BMI, Kg/m <sup>2</sup>		
Underweight	6	10%
Normal weight	9	15%
Overweight	21	35%
Obesity	24	40%
Symptoms		
Abnormal vaginal bleeding	19	31.67%
Pelvic pain	14	23.33%
Frequent urination	5	8.33%

Difficulty urinating	12	20.0%
Pain during intercourse	10	16.67%
Enlarged uterus	19	31.67%
Previous abdominal operation		
Non	15	25.0%
One	35	58.33%
More than one	10	16.67%
Comorbidities		
Yes	18	30.0%
No	42	70.0%
Hypertension	35	58.33%
Coronary disease	8	13.33%
Pulmonary disease	7	11.67%
Diabetes mellitus	15	25.0%
Other chronic disease	11	18.33%
Smoking status		
Yes	12	20.0%
No	48	80.0%
ASA, (%)		
I	4	6.67%
II	12	20.0%
III	28	46.67%
IV	16	26.67%
Techniques of diagnoses		
Ultrasound	36	60.0%
CT scan	24	40.0%
Education status		
Not in the school	5	8.33%
Primary	9	15.0%
Secondary	15	25.0%
College/university	31	51.67%
Employment status		
Employed	24	40.0%
Un – employed	36	60.0%

**Table 2:** Determine the diagnostic results for women patients with uterine tumors and the degree of severity of the tumors by CT scan and ultrasounds

Variables	Number of patients [60]	Percentage [%]
<b>Types of uterine tumors</b>		
Fibroids	16	26.67%
Endometrial cancer	9	15.0%
Uterine sarcoma	3	5.00%
Adenomyosis	2	3.33%
Polyps	30	50.0%
<b>Severity of uterine tumors</b>		
Mild	3	5.0%
Moderate	15	25.0%
Severe	42	70.0%

**Table 3:** Perioperative data of laparoscopic hysterectomy

Perioperative data	Number of patients [60]	Percentage [%]
Operative time [min], (Mean $\pm$ SD)	146.14 $\pm$ 30.53	
Estimated blood loss (ml), (Mean $\pm$ SD)	170.53 $\pm$ 146.35	
Blood transfusion, N [%]	2	3.33%
Anesthesia used		
General anesthesia, N [%]	60	100%
<b>Medical test</b>		
Heart rate (Mean $\pm$ SD), BPM	90.24 $\pm$ 4.31	
Systolic blood pressure, mm Hg (Mean $\pm$ SD)	112.28 $\pm$ 3.56	
Diastolic blood pressure, mm Hg (Mean $\pm$ SD)	77.34 $\pm$ 2.93	
<b>Mortality rate</b>		
Yes	0	0%
No	60	100%
<b>Admission to the intensive care unit, N [%]</b>		
Yes	2	3.33%
No	58	96.67%
Hospital stays, days (Mean $\pm$ SD)	2.8 $\pm$ 1.3	

**Table 4:** Postoperative complications outcomes

Complications	Number of patients [60]	Percentage [%]
<b>Early (&lt; 30 days)</b>		
Hemorrhage	0	0%
Wound rupture	0	0%
Deep venous thrombosis	0	0%
Infection	1	1.67%
Urosepsis	2	3.33%
Vaginal cuff cellulitis	0	0%
Blood clots	0	0%
<b>Total</b>	3	5%
<b>Late (&gt; 30 days)</b>		
Lower extremity lymphedema	3	5%
Pelvic lymphocyte	1	1.67%
Deep venous thrombosis	0	0%
Pelvic abscess	1	1.67%
Wound hernia	1	1.67%
Blood clots	0	0%
<b>Total</b>	6	10%

**Table 5:** Assessment level of pain for women after laparoscopic hysterectomy surgery

Follow-up time, weeks.	Postoperative
1 <sup>st</sup> week	4.3 $\pm$ 1.01
2 <sup>nd</sup> week	3.1 $\pm$ 0.2
3 <sup>rd</sup> week	1.05 $\pm$ 0.05
4 <sup>th</sup> week	0.21 $\pm$ 0.001

**Table 6:** Assessment of clinical outcomes of quality – of life for patients after laparoscopic hysterectomy surgery

Items	QoL scores
Physical function	85.46 $\pm$ 5.78
Psychological function	92.01 $\pm$ 4.36
Social and emotional functions	87.66 $\pm$ 3.89
Daily activity function	94.40 $\pm$ 2.3

**Table 7:** Determine the satisfaction level of women after laparoscopic hysterectomy surgery

Satisfaction level	Number of patients [60]	Percentage [%]
Excellent	45	75%
Good	13	21.67%
Fear	1	1.67%
Poor	1	1.67%

## DISCUSSION

Our clinical outcomes found that women with ages 46–50 were the greatest class who conducted laparoscopic hysterectomy, which included 21 cases, followed by women with ages 41–45 years with 18 cases, underweight BMI with 6 cases, normal weight BMI was 9 cases, overweight BMI was 21 cases, and obesity was 24 cases, most common symptoms which spread into patients included abnormal vaginal bleeding with 19 cases, pelvic pain with 14 cases, and enlarged uterus with 19 cases, previous abdominal operations in one time got 35 cases, more than one previous abdominal operation got 10 cases, rate of women with comorbidities were 30%, which include hypertension with 58.33%, diabetes mellitus with 25%, smokers were 12 cases and non-smokers were 48 cases.

Our study examined the clinical outcomes of patients who underwent diagnoses by ultrasound (36 cases) and CT scan (24 cases), where we determined the diagnostic results for women patients with uterine tumors, which distributed with most types of uterine tumors prevalence which are polyps with 30 cases and fibroids with 16 cases, and the degree of severity of the tumors by CT scan and ultrasounds which classified into three sections which are mild with 3 cases, moderate with 15 cases, and severe with 42 cases.

According to perioperative data of laparoscopic hysterectomy surgery, we found operative time of laparoscopic hysterectomy was  $146.14 \pm 30.53$  minutes, blood transfusion included 2 women with estimated blood loss was  $170.53 \pm 146.35$  mL, where all patients were conducted laparoscopic hysterectomy under general anesthesia, heart rate was  $90.24 \pm 4.31$  BPM, systolic blood pressure was  $112.28 \pm 3.56$  mm Hg, diastolic blood pressure was  $77.34 \pm 2.93$ , no death cases, admission to the intensive care unit included 2 cases, hospital stays was  $2.8 \pm 1.3$ , rate of complications were 9 cases, where early complications included 3 cases and late complications included 6 cases, pain level of post-operative found first week was  $4.3 \pm 1.01$ , second week was  $3.1 \pm 0.2$ , third week was  $1.05 \pm 0.05$ , fourth week was  $0.21 \pm 0.001$ , quality of life was

enrolled physical function was  $85.46 \pm 5.78$ , psychological function was  $92.01 \pm 4.36$ , social and emotional functions were  $87.66 \pm 3.89$ , daily activity function was  $94.40 \pm 2.3$ , satisfaction levels were divided into excellent with 75%, good 21.67%, fear with 1.67%, and poor with 1.67%.

Last studies found that laparoscopic hysterectomy provides a minimally invasive procedure that has transformed the medical field of gynecology and brought significant benefits to women with malignancies, where laparoscopic hysterectomy improves clinical results in a variety of areas. [Bardens, D. et al., 2014; Siedhoff, M. T. et al., 2012]

An American study showed laparoscopic hysterectomy has been associated with shorter recovery periods and less postoperative discomfort. Which the tiny incisions used for laparoscopic treatments cause less tissue stress, leading to reduced pain and suffering for the patients; where this can significantly enhance the general level of life for women receiving treatment, allowing them to resume their typical activities sooner. [Morgan-Ortiz, F. et al., 2013]

A British study enrolled that laparoscopic hysterectomy was demonstrated to shorten hospital stays and lower the risk of postoperative complications, which patients who underwent laparoscopic surgery often have shorter hospital stays, resulting in cheaper healthcare expenses and speedier recuperation, where the procedure's minimally invasive nature minimizes the danger of infection. [McMahon, M. D. et al., 2014]

## CONCLUSION

Our study shows that laparoscopic hysterectomy has several advantages in terms of clinical results, quality of life, pain intensity, hospital stay, as well as complications, whereas laparoscopic hysterectomy is the preferred alternative for many women with tumors seeking a safer and more successful surgical technique due to its ability to reduce tissue stress, discomfort, and recovery durations.

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**Source of support:** Nil; **Conflict of interest:** Nil.

**Cite this article as:**

Ali, F.K.A., Ismael, S.M. and Abduaali, D.K. "Complications of Hysterectomy in Iraqi Women in the Department of Obstetrics and Gynecology." *Sarcouncil Journal of Medicine and Surgery* 3.4 (2024): pp 25-31.