



## ABDOMINAL MYOMECTOMY VERSUS ABDOMINAL HYSTERECTOMY FOR SYMPTOMATIC UTERINE FIBROID IN PATIENTS ADMITTED AT BABYLON MATERNITY HOSPITAL

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### ABSTRACT

**BACKGROUND:** Uterine leiomyoma is common problem among women; its removal is commonly associated with complications. Many researches are looking forward to decide the management with less complication.

**AIM:** To compare the preoperative demography, clinical presentation and postoperative complication of total abdominal hysterectomy and abdominal myomectomy in the surgical management of uterine fibroid among Iraqi patients.

**Patients and Method:** This is a hospital base cross sectional study carried out at the Obstetric and gynecological department in Babylon Maternity Hospital, Hilla city, Iraq during the year 2011. The study involved all patients underwent surgery for fibroid in the unit and the decision of surgery done according to patient's age, parity, sizes of the uterus and fibroid were determined by pelvic ultrasonography and the patients preference. The hospital records of the patients were retrospectively reviewed to collect the data for the study. Postoperative complications included: intraoperative bleeding, postoperative pyrexia, postoperative blood transfusion and the duration of hospital staying.

**RESULTS:** This study involved 70 patients of whom 52 women (74%) underwent Hysterectomy and 18 women (26%) underwent Myomectomy. Myomectomy was performed for relatively younger women with lower parity, higher Hb. level and smaller uterine and fibroid sizes as compared to Hysterectomy ( $P < 0.001$ ). Myomectomy associated with a significantly higher rate of postoperative blood transfusion, postoperative pyrexia and duration of hospitalization than Hysterectomy ( $p < 0.001$ ).

**CONCLUSIONS:** Abdominal Hysterectomy was preferred more than Abdominal Myomectomy as surgical management of uterine fibroid and associated with less postoperative complications than Myomectomy.

**KEYWORDS :** Uterine fibroid, symptomatic, Abdominal Myomectomy, Abdominal Hysterectomy, Babylon Maternity Hospital.

### INTRODUCTION:

Uterine fibroids are the commonest benign tumours of the female genital tract that developed in the myometrium of the uterus, occurring in more than 30% of women<sup>[1]</sup>. However, they are symptomatic in less than 50% of the cases, presenting commonly as abnormal uterine bleeding, infertility or pressure symptoms<sup>[2]</sup>. They cause menorrhagia in 30% of patients that can produce anaemia<sup>[3]</sup>. Fibroids are associated with infertility in 5-10% of cases, but when all other causes of infertility are excluded, they are responsible for infertility in 2-3% of cases<sup>[4]</sup>. Generally, symptomatic fibroids require treatment in the form of hormones or surgery<sup>[5]</sup>. Hysterectomy has been considered the traditional and definitive treatment for symptomatic fibroids<sup>[1,6]</sup>. Hysterectomy is generally recommended, if the patient's family is complete and if there is no cultural or individual desire to preserve the uterus<sup>[7]</sup>. Myomectomy is being preferred over hysterectomy in the surgical management of patients with symptomatic fibroids, respectively of their desire for future childbearing<sup>[8]</sup>. However, fibroids recur in 15-30% of women who undergo myomectomy<sup>[7,8]</sup>. Besides, it may be technically more difficult<sup>[8]</sup>, often time consuming, more blood loss as high risk of hemorrhage during operation<sup>[9]</sup>, and associated with three times greater risk of elevated temperature postoperatively compared to hysterectomy<sup>[9,10]</sup>, however recent evidence, suggests that abdominal myomectomy and hysterectomy are equivalent procedures for uterine fibroids<sup>[11,12]</sup>.

Fibroids are (benign) growths that develop in the muscular wall (the myometrium) of the uterus and sometimes in the cervix. They are mainly composed of muscle tissue. Fibroids are also referred to as myoma or fibromyoma, leiomyoma and leiomyomata<sup>[1]</sup>. Uterine fibroids are the most common tumours of the female genital tract; they are diagnosed in half of all women. In most cases, there is more than one fibroid in the uterus. Fibroid size is irrespective of the severity of symptoms; it is mainly their position in the uterus that determines their impact, so small fibroids may cause more trouble

than much bigger ones<sup>[2]</sup>. Fibroid blood supply comes from localized expansion of the normal subserosal vasculature of the uterus. A number of small arteries, less tortuous than the adjacent radial arteries, penetrate the myoma anywhere on its circumference and those entering its inner aspect are seen to have reversed their normal centripetal course. This arterial density is without a regular pattern. Damage to these vessels occurs during myomectomy with resultant heavy bleeding<sup>[3]</sup>.

Researchers think that more than one factor could play a role as causative factor of fibroid; these factors could be: Hormonal (affected by estrogen and progesterone levels), or Genetic (runs in families). Fibroids are mostly benign (not cancerous). Rarely (less than one in 1,000) a cancerous fibroid will occur. This is called (leiomyosarcoma)<sup>[4]</sup>.

### PATIENTS & METHODS:

**Study design:** A hospital base record descriptive study. This study has been carried out in the Babylon Maternity Hospital, Hilla, Iraq. Hilla city is located south of Baghdad city by 100 km. This hospital considered as the main obstetrical & gynecological hospital in Hilla city with capacity of 124 beds. The total number of patients who admitted to the gynecological and obstetrical department in 2011 was 19,379 patients. The data collected between February, 2012 till May, 2012.

The convenience sample included all the patients who underwent abdominal myomectomy and patients who underwent abdominal hysterectomy for symptomatic uterine fibroid in 2011.

The hospital records were reviewed to identify women who underwent abdominal myomectomy or abdominal hysterectomy for symptomatic uterine fibroids in 2011. The total number of patients who underwent hysterectomy and myomectomy was 113 women, only (70) women of them met the inclusion criteria.

The presence of symptoms and abdominal mass as the size of the uterus equal to that of 12 weeks of gestation or more.

**Study Variable:**

**A. Dependent Variable:**

Abdominal Hysterectomy and Abdominal Myomectomy as surgical management of symptomatic uterine fibroid.

**B. Independent Variable:**

Age, Parity, Hemoglobin level of the patient before operation, the size of the myoma was determined by the clinical examination, report of pelvic ultrasonography (largest diameter of the largest fibroid), intraoperative bleeding & visceral injury, postoperative blood transfusion, postoperative febrile morbidity (defined as a temperature of 38° C. or greater after the first 48 hours), and the duration of hospital stay following surgery.

**Statistical analysis:**

Data were analyzed using statistical package for social sciences version-20 (spss-20).

1. Descriptive statistical analysis: {frequency, percentage, mean, confidence interval (C.I)} has been done.
2. Pearson chi-square test and T-test has been done for Bivariate analysis.
3. Binary Logistic regression has been done for multi-variety.
4. Level of significance as (P-value ≤0.05) is significant<sup>[26]</sup>.

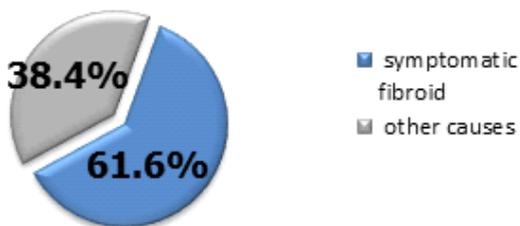
**Limitations:**

Several limitations must be kept in mind when interpreting the results of this study as:

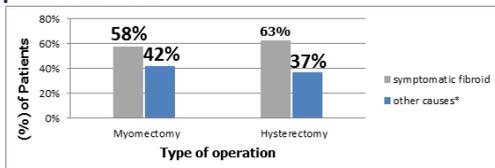
1. It is cross sectional study, therefore the cases detected are prevalent cases (survivors) leading to survival bias.
2. Lack in the validity and reliability of medical reports in the hospital.
3. More details information about: the amount of blood loss during operation, mean duration of operative time, visceral injury, would be useful for further decision to select the type of operation.
4. There are a limited number of updated references related to the study, and that may be due to the limited use of abdominal myomectomy and abdominal hysterectomy in management of myoma and substituted by laparoscopic and robotic myomectomy now a day in developed countries while still the main stay of management of myoma in developing countries including Iraq.

**RESULTS:**

The total number of patients managed by Hysterectomy and Myomectomy during 2011 was 113 women. Out of these 113 women, (70) women underwent Abdominal Hysterectomy and Abdominal Myomectomy for symptomatic fibroid given a proportion of (61.6%) as shown in (Fig.1).

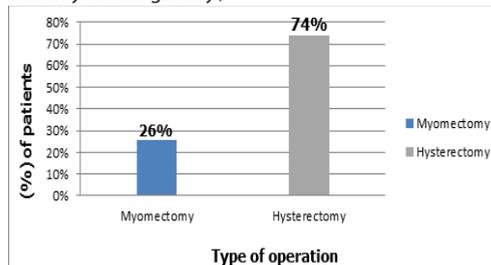


**Figure 1: Proportion of (Myomectomy & Hysterectomy) due to symptomatic fibroid.**



**Figure 2: Proportion of (myomectomy & Hysterectomy) due to other causes than symptomatic fibroid during 2011.**

\*(treatment for infertility, vaginal myomectomy, previous myomectomy and Pregnancy)



**Figure 3: Distribution of operative management among patients with symptomatic fibroid.**

**Table 1: Frequency Distribution of the base line characteristics of patients with uterine fibroid. (n=70)**

Variable	n	(%)	Mean ± SD
Age	≤45 years	27	(38.6)
	>45 years	43	(61.4)
Hb	≤ 11 gm/dl	53	(75.7)
	>11gm/dl	17	(24.3)
Uterine size	≤ 10 cm	31	(44.3)
	>10 cm	39	(55.7)
Fibroid size	≤6 cm	18	(25.7)
	> 6 cm	52	(74.3)
Parity	≤5 child	31	(44.5)
	> 5 child	39	(56.5)

**Table 2: Distribution of patients with Myomectomy & Hysterectomy by: (Age, Hb level, Size of uterus & fibroid). (n=70)**

Parameter	Type of operation	N	Mean (S.D)	P value	95% C.I for Mean	
					Lower Bound	Upper Bound
Age (years)	abdominal myomectomy	18	36.56 (5.7)	0.001	33.69	39.43
	abdominal hysterectomy	52	48.71 (5.5)		47.17	50.25
Hb (gm/dl)	abdominal myomectomy	18	11.5 (0.98)	.014	11.01	11.99
Fibroid size(cm)	abdominal myomectomy	18	5.47 (1.3)	0.001	4.83	6.12
	abdominal hysterectomy	52	7.46 (1.17)		7.13	7.79
Uterine size(cm)	abdominal myomectomy	18	10.06 (1.19)	<0.001	9.46	10.65
	abdominal hysterectomy	52	10.92 (0.92)		10.67	11.18

As shown in (Tab. 2): There were statistically significant difference between the type of operation and the (Age, Hb level of the patients, Size of both uterus and myoma). As Compared to Hysterectomy, Myomectomy was performed for relatively younger women, with higher Hb. level and smaller uterine and fibroid size than Hysterectomy.

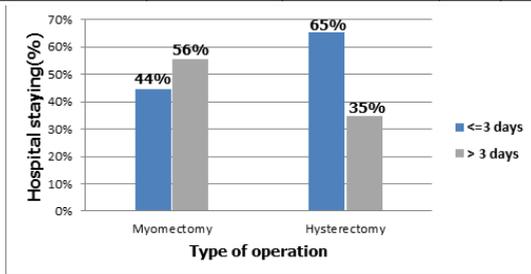
**Table 3: Distribution of patients with Myomectomy and Hysterectomy according to Parity. (n=70)**

Variable	Type of operation		Total	P. value
	Abdominal Myomectomy N (%)	Abdominal Hysterectomy N (%)		
parity	≤5	17 (94.4)	14 (27)	31
	>5	1 (5.6)	38 (73)	39

The association between the type of operation and the parity was statistically significant. There was strong association between high parity (>5) and Abdominal Hysterectomy, the rate of Hysterectomy increase with increment of parity as shown in (Fig.4).

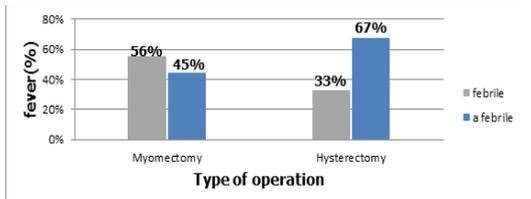
**Table 4: Distribution of patients according to postoperative status (hospital staying, postoperative fever, postoperative blood transfusion). (n=70)**

Postoperative status	Type of operation		Total	P. value
	Abdominal Myomectomy N (%)	Abdominal Hysterectomy N (%)		
Hospital staying ≤ 3 days	8 (44.4)	34(65.3)	42	0.001
> 3days	10 (55.6)	18(34.7)	28	
Post-operative fever Febrile (c°) A febrile (c°)	10(55.5) 8 (44.5)	17 (32.7) 35 (67.3)	27 43	0.002
Post-operative blood transfusion Yes No	14(77.7) 4 (22.3)	21 (40.3) 31 (59.7)	35 35	0.006



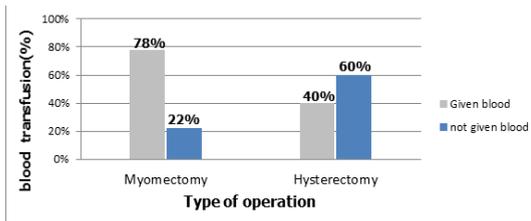
**Figure 5:** Distribution of patients with Myomectomy & Hysterectomy according to the duration of hospitalization. (n=70)

The association between the period of hospitalization of the patients and the type of the operation is statistically significant. Compared to Myomectomy, Hysterectomy associated with lower duration of hospital staying than Myomectomy. As shown in (Fig.5).



**Figure 6:** Distribution of patients with Myomectomy & Hysterectomy according to postoperative pyrexia.

The association between the postoperative fever and the type of the operation is statistically significant. Compared to Hysterectomy, Myomectomy associated with higher postoperative pyrexia than Hysterectomy. As shown in (Fig. 6).



**Figure 7:** Distribution of patients with Myomectomy & Hysterectomy according to the postoperative blood transfusion.

The association between the postoperative blood transfusion and the type of the operation is statistically significant. Compared to Hysterectomy, Myomectomy associated with higher rate of blood transfusion than Hysterectomy. As shown in (Fig. 7).

**DISCUSSION:**

The rate of abdominal hysterectomy and myomectomy has been declined as increase in the rate of vaginal and laparoscopic

hysterectomies and myomectomies as these procedures have been associated with shorter hospitalizations, faster recovery and fewer postoperative infections compared with abdominal hysterectomy and abdominal myomectomy<sup>[25]</sup>.

In the Babylon Maternity Hospital, all the patients who underwent abdominal hysterectomy and abdominal myomectomy are presented with symptomatic fibroid. Most of them underwent hysterectomy. This finding is in contrast with the finding of the study from Nigeria<sup>[19]</sup>, as myomectomy done more than hysterectomy among the patients, and similar to the finding in the other studies from Nigeria<sup>[16]</sup>, Libya<sup>[17]</sup>, Pakistan<sup>[19]</sup> and Saudi Arabia<sup>[20]</sup>, but in this study the proportion of hysterectomy is markedly increase as compared with others, probably because of the presentation at advanced age in our patients with high parity as well as chronic anemia and this may be due to the advance development of laparoscopic hysterectomy and myomectomy that used in these countries lead to decrease the proportion of abdominal operation.

The age is considered as an important factor that determines the decision to select the type of operation. In this study, The average age of women underwent myomectomy was significantly lower than that of hysterectomy group, as this finding is similar to the finding of the other studies<sup>[16,17,18,19,20,21,22]</sup>, as most of the women aged ≥40 years had hysterectomy, because they were parous and also because of the low probability of further pregnancies at that age compared to future complications<sup>[9]</sup>, which advised in favour of hysterectomy, in order to give them good quality of life. In recent study the mean age for both groups is higher than the mean age of patients in above studies, probably because of the late presentation of the cases, as most of them were not consulted the doctors unless the symptoms become sever which reflected the low awareness level of our patients at the individual and public level, and this indicate the need of proper health education of both public and health care providers.

Data from this study found that the preoperative Hemoglobin level of the women ranged between ( 10-13 gm/dl) and there were statistically significant differences between the two groups for average Hb. level, as myomectomy was performed for relatively higher Hb. level than hysterectomy and this may be due to smaller fibroid size that leads to minor symptoms and late presentation with long history of menorrhagia in Iraq, there is a high percentage of malnutrition state among women and there are potentially at high risk. This finding was in contrast with the finding of other studies<sup>[18, 20, 21]</sup> that showed there were no statistically significant differences between the two groups for the average Hb. level.

According to the reports of pelvic ultrasonography, the association between the uterine size and the fibroid size with the type of the operation is statistically significant. The rate of hysterectomy increase with increment of the uterine size and fibroid size. This finding agreed with the finding of other studies<sup>[22,23]</sup> and in contrast with the finding of the study<sup>[18]</sup> in USA, and<sup>[21]</sup> in Saudi Arabia that show no significant difference in the uterine and fibroid size between the two groups (Hysterectomy and Myomectomy) and in contrast with the finding of the study of Mohammed N.B<sup>[20]</sup> who found that the myomectomy group had a significantly larger mean uterine and fibroid sizes than the hysterectomy. Number and size of fibroids are often considered as the factors in deciding surgical treatment options for the patients with uterine fibroid<sup>[20]</sup>.

It is important factor that determine the decision to select the type of operation and that depend on the patients desire for the number of the children that they want to complete their family and the sex of their children for the developing country including Iraq; most of the patients were of high parity because of the early marriage and long childbearing period, also that related to the social factors as: preferring males that leads to increase the parity in women who born more than one females, we consider, the five live children in each family may help us to detect the correct choice in selected the type of operation. Data from this study found, the parity of the

women ranged between (1–7) child, the patients who underwent myomectomy, had 5 children or less while the patients who underwent hysterectomy had more than 5 children and this finding is similar to finding of the other studies<sup>[16, 17, 18, 19, 20]</sup> as hysterectomy associated with higher parity.

Including {postoperative blood transfusion, hospital staying and post-operative fever}, data from this study found that there were a statistically significant differences between the two groups for postoperative transfusion. Compared to hysterectomy, myomectomy associated with higher rate of blood transfusion than hysterectomy. As postoperative anaemia and pyrexia occurred more with myomectomy than hysterectomy, which may be probably due to bleeding into the fibroid cavities and peritoneum with resultant reactionary pyrexia following myomectomy, so efforts must be made to obliterate all dead spaces at surgery<sup>[9]</sup>. This agrees with the finding of other studies<sup>[16, 17]</sup> and in contrast with the finding of another studies<sup>[18, 20, 23]</sup> who observed greater transfusion rate among hysterectomy group, compared to myomectomy group, also in contrast with the finding of other studies<sup>[21, 22]</sup> which found there were no significant differences between the two groups for postoperative transfusion.

Postoperative fever, in this study, the association between the post-operative fever and the type of the operation is statistically significant.

The postoperative fever was significantly less in hysterectomy. This finding is agreed with the finding of other studies<sup>[16, 18]</sup> and in contrast with the finding of other studies<sup>[20, 22]</sup> that showed, the postoperative fever is commonly associated with hysterectomy. While other studies proved that there were no significant differences between the two groups<sup>[17, 21]</sup>.

Period of hospitalization is significantly lower in patients with hysterectomy group than in myomectomy group, and this probably because of more postoperative complications related to myomectomy as pyrexia, hemorrhage, and infection. This agrees with the finding of the study<sup>[16]</sup> and in contrast with the finding of the other studies<sup>[17, 18, 21, 22]</sup> that showed no difference in the period of hospitalization between patients underwent the two types of operation.

In this study, there is no maternal death. Abdominal myomectomies were successfully performed in all women for whom they were scheduled (Hysterectomy, internal iliac ligation or other procedures) were not necessary to control the bleeding. Abdominal hysterectomies were successfully performed. There were no intraoperative complications as mentioned in the operative notes of the patient's records, like (hemorrhage, visceral injury or other complications), this is in contrast with other studies that were carried out in different countries which showed that many intraoperative complications occurred during abdominal hysterectomy such as (ureteral, bladder, bowel or other visceral) injuries, as in<sup>[16, 18, 20, 21, 22]</sup>. The higher frequency of complications with myomectomy and hysterectomy in those studies can be reduced by using endoscopic methods like Da Vinci Myomectomy, which is a new category of minimally invasive myomectomy and the latest evolution in robotics technology, which combines the best of open and laparoscopic surgery<sup>[25]</sup>.

## CONCLUSIONS:

1. Abdominal Hysterectomy was done frequently compared to abdominal myomectomy as surgical management of fibroid.
2. Myomectomy was performed for relatively younger women, lower parity, with higher Hb. level and smaller uterine and fibroid sizes than hysterectomy.
3. There were higher rate of postoperative fever, higher duration of hospitalization and higher rate of postoperative blood transfusion among patients with myomectomy.
4. There was no maternal mortality. Abdominal myomectomy was successfully performed in all women for whom it was

scheduled. None of the planned myomectomy was converted to hysterectomy, and there was no intraoperative complications had been occurred during hysterectomy and myomectomy as bleeding or visceral injury as mentioned in the patient's records.

5. Incomplete operative note was noticed.

**Conflict of interest:** There is no interest of conflict with any organization and this research is not Funded.

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