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ASSESSMENT OF SURGICAL OUTCOMES IN PATIENTS UNDERGOING TOTAL ABDOMINAL HYSTERECTOMY FOR UTERINE FIBROIDS AT A TERTIARY CARE HOSPITAL IN LARKANA

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ABSTRACT

OBJECTIVE: *To determine the outcomes of total abdominal hysterectomy among patients undergoing uterine fibroids surgery at a tertiary care hospital, Larkana.*

METHODOLOGY: *The study was conducted in the Department of Gynaecology and Obstetrics, Shaikh Zayed Hospital, Larkana, to determine the outcomes of total abdominal hysterectomy among patients undergoing uterine fibroids surgery at a tertiary care hospital. This descriptive cross-sectional study included 159 patients, aged 20–60 years with a diagnosis of uterine fibroids and a fibroid duration of ≥1 month. Post-surgery, patients were monitored in the ward to evaluate estimated intra-operative blood loss, requirement for blood transfusion, postoperative fever, and duration of hospital stay. The SPSS version 26.0 was used to analyze the data.*

RESULTS :*The mean ± standard deviation of age of the participants was noted as 38.43 ± 10.53 years. The mean and standard deviation of estimated intra-operative blood loss was found to be as 550.25 ± 82.87 mL, while the mean ± standard deviation for duration of surgery and hospital stay were noted as 125.53 ± 27.28 minutes and 6.25 ± 1.54. Visceral injury was noted 3.8% women, blood transfusions were required (22.0%), postoperative fever was noted in (10.1%) patients.*

CONCLUSION: *The study concluded that total abdominal hysterectomy appears to be a safe and effective treatment option for women with symptomatic uterine fibroids. The surgery was well tolerated by the majority of patients with less complications. Overall, it was associated with an acceptable intra-operative blood loss and duration of hospital stay and can be regarded as a non-compromising surgical procedure in a tertiary care set up.*

KEYWORDS: *Abdomen, Blood Loss, Hysterectomy, Pain, Postoperative Complications, Surgical Outcomes, Uterine Neoplasms*

INTRODUCTION

Uterine fibroid is a benign tumor of the myometrium smooth muscle. They are among the most common neoplasm in females. Over half the women above 50 years age have one fibroid with 70%, and 80% of Caucasian and Afro Caribbean women representing with at least one fibroid [1,2]. Histologically, fibroids are made up of monoclonal cells of uterine smooth muscle among dense connective tissue matrix, including collagen, elastin, fibronectin and glycosaminoglycans [3]. The precise pathogenesis of fibroids is unknown, but strong evidence exists that their growth is enhanced by progesterone and estrogen, based on the observations that fibroids rarely develop before menarche and involute after menopause [4]. There are different types of uterine fibroids based on their location and number. They may be submucosal, subserosal,

intramural, pedenculated or single and multiple [5]. Fibroids have substantial medical social and economic effects, [6] being one of the most traded disorder by the gynecologist.

Symptomatic fibroids, in general, are indicated for treatment using either hormones or surgical intervention [7]. Hysterectomy has been regarded as the standard definite treatment of symptomatic fibroid. Roughly 20–30% of all hysterectomies and 40% of the abdominal hysterectomies are performed for the indications of the fibroid [8,9]. In the surgical treatment of fibroids, hysterectomy is done about six times more often than myomectomy.

Total abdominal hysterectomy (TAH), consisting of a total resection of the uterus, is still the surgical management of choice in symptomatic fibroid patients who have completed childbearing or desire clear symptom resolution [10]. Hysterectomy is usually recommended if the patient's family is complete and if there is no cultural and personal desire for reinstating the uterus as it effectively cures menorrhagia and prevents the recurrence of fibroid mass [11].

Hysterectomy in surgical treatment for symptomatic fibroids might be acceptable only in patients whose childbearing is completed, thus myomectomy is the preferred method of treatment [12]. Despite this, about 15–30% of women will have a recurrence of the fibroids following myomectomy, with 10–25% of these women requiring repeat surgery [13,14].

The decision to undergo TAH for uterine fibroids requires careful consideration, as it entails significant surgical intervention and necessitates understanding the potential outcomes and implications for patients' health and well-being. Evaluating the outcomes of TAH in this context is crucial for informing clinical decision-making, optimizing patient care, and enhancing treatment guidelines. Hysterectomy stands as a highly effective treatment providing immediate and profound relief from the distressing symptoms associated with uterine leiomyomas. Across various studies, uterine leiomyomas consistently emerge as the primary indication for hysterectomy, reflecting the significant burden these fibroids impose on affected individuals. Notably, the demographic profile of patients undergoing this surgical intervention predominantly comprises women aged between 30 and 55 years [15,16].

The current study aims to investigate the outcomes of total abdominal hysterectomy in patients with uterine fibroids, a condition that remains a significant public health concern as the leading cause of hysterectomy among females. There exists ongoing debate within medical literature regarding the optimal surgical management for patients presenting with symptoms associated with uterine fibroids. While numerous studies have focused on outcomes of total abdominal hysterectomy in women with indications such as uterine bleeding, malignancy, or adenomas, there is a paucity of research specifically examining outcomes in women with uterine fibroids at an international level. Moreover, no local studies have been conducted on this topic to date. By filling this gap, our study aims to contribute valuable insights into the outcomes of total abdominal hysterectomy in patients with uterine fibroids, which will aid in the assessment of surgical strategies and the development of interventions to enhance both intraoperative and postoperative outcomes in this patient population.

METHODOLOGY

The study was conducted in the Department of Gynaecology and Obstetrics, Shaikh Zayed Hospital, Larkana, to determine the outcomes of total abdominal hysterectomy among patients undergoing uterine fibroids surgery at a tertiary care hospital. This descriptive cross-sectional study included 159 patients, calculated using the WHO sample size calculator with a confidence level of 95% and an 11.76% frequency of postoperative fever. Patients were selected using non-probability consecutive sampling. The inclusion criteria comprised patients aged 20–60 years with a diagnosis of uterine fibroids and a fibroid duration of ≥1 month. Uterine fibroids were identified based on ultrasonographic findings, including the presence of one or more of the following: fibroids > 5 cm, hypoechoic fibroids compared to the myometrium, calcifications showing echogenic foci with shadowing compared to the myometrium, or cystic areas of necrosis or degeneration. Patients with a history of cervical, uterine, or vaginal malignancy; scarred uterus; medical conditions such as type II diabetes mellitus, thyroid disease, essential hypertension, thrombophilia, chronic

liver disease, or cardiac disease; thromboembolic disease; HELLP syndrome and APLA; and iron deficiency anemia, megaloblastic anemia, or thalassemia requiring transfusion or supplementation were excluded.

Data such as age, height, weight, BMI (calculated from weight and squared height), parity, gravida, fibroid number and location, and preoperative hematocrit and hemoglobin levels were recorded in a predesigned proforma. All patients underwent total abdominal hysterectomy under general anesthesia, performed by experienced attending physicians with more than five years of experience, assisted by the researcher. Post-surgery, patients were monitored by the principal investigator in the ward to evaluate outcomes including estimated intra-operative blood loss, requirement for blood transfusion, postoperative fever, and duration of hospital stay. Estimated blood loss was calculated using the formula based on preoperative and postoperative hematocrit levels. Blood transfusion was defined as any unit transfused during or within 72 hours post-surgery, and postoperative fever was defined as a temperature ≥38°C within 72 hours of surgery. Hospital stay duration was measured from the end of surgery to discharge of the patients. All the collected data were entered into SPSS version 26.0. Descriptive statistics were calculated in terms of mean ± standard deviation and frequency with percentage. Chi-square test was applied to assess statistical significance at 5% level of significance.

RESULTS

Table I summarize the demographic and clinical characteristics of the study participants. The mean ± standard deviation of age of the participants was noted as 38.43 ± 10.53 years, with the majority (69.8%) falling within the 20–40 years age group, while 30.2% were aged > 40 years. The mean ± standard deviation of the hemoglobin and hematocrit levels were noted as 11.25 ± 1.1 g/dL, with 65.4% having hemoglobin levels of <12 g/dL and 34.6% having levels ≥12 g/dL; and 37.42 ± 4.14%, with most participants (87.4%) having hematocrit levels between 30–40%, and 12.6% having levels >40%.

In distribution of marital status, the majority (82.4%) were married, while 17.6% were unmarried. A small proportion of participants (15.7%) required preoperative blood transfusion, while the remaining 84.3% did not. Similarly, 21.4% had received preoperative hormonal treatment, whereas 78.6% had not.

In terms of the distribution of indications for surgery, the most common indication was abnormal uterine bleeding (75.5%), followed by chronic pelvic pain (29.6%) and dysmenorrhea (26.4%). While indications included infertility (12.6%), dyspareunia (8.8%), backache (6.9%), and acute pelvic pain (3.1%).

Table II shows the surgical outcomes of the patients. The mean and standard deviation of estimated intra-operative blood loss was found to be as 550.25 ± 82.87 mL, while the mean ± standard deviation for duration of surgery and hospital stay were noted as 125.25 ± 27.28 minutes and 6.25 ± 1.54 days respectively. Visceral injury was noted in 6 (3.8%) women, while the majority (96.2%) did not report any such complications. Blood transfusions were required in 35 patients (22.0%), whereas 124 patients (78.0%) did not require transfusions. Postoperative fever was observed in 16 patients (10.1%), with the remaining 143 patients (89.9%) showing no signs of fever.

DISCUSSION

The surgical outcome of TAH in uterine fibroids is usually assessed in terms of short-term and long-term outcome. TAH remains a frequent treatment of symptomatic fibroids when conservative measures are unsuccessful or untenable. Postoperative quality of life outcome data often provide information related to symptom resolution, such as cessation of heavy bleeding or pelvic pain alleviation, and an overall improved quality of life. TAH has associated risks, which IMP includes immediate operative and delayed complication(s) such as hemorrhage, infection, injury to adjacent organs e.g. bladder or bowel; offending pathologies that might invalidate the fundamental principle of the clinical clinical practice guideline. The recovery process can differ but usually takes a few weeks. Length of hospital stay, and overall patient satisfaction is affected by surgical experience, patient health status and adherence to postoperative care protocols. A long-term outcome is usually favorable, as symptoms are greatly decreased and life becomes more bearable for the majority of individuals, but changes in hormone levels or psychological effects may occur for some women.

The results of this study highlight the outcomes of total abdominal hysterectomy (TAH) in order to manage symptomatic uterine fibroids, emphasizing effectiveness and its safety. TAH has been a widely used surgical option, especially in cases for whom conservative treatments or minimally invasive surgeries are not feasible. In this study, the majority of patients experienced favorable outcomes with minimal complications, including low rates of visceral injury, blood transfusion, and postoperative fever.

In our study, the mean estimated intra-operative blood loss (550.25 ± 82.87 mL), while the mean duration of surgery (125.53 ± 27.28 minutes), and hospital stay (6.25 ± 1.54). Visceral injury was found in (3.8%) of women, blood transfusion (22%), and postoperative fever (10.1%) patients.

A study by Seo, et al reported the outcomes as blood loss (224 ± 170), duration of surgery (105.5 ± 32.1), hospital stay (4.09 ± 1.31), blood transfusion (8.3%) and fever (0%) [17].

The higher mean estimated intra-operative blood loss noted in our study (550.25 ± 82.87 mL) compared to Seo et al. (224 ± 170 mL) may be because of several factors including differences in surgical techniques, patient populations and the complexity of cases. Seo, et al focused-on outcomes of minimally invasive approaches such as laparoscopic hysterectomy which are documented to result in significantly lower blood loss, due to smaller incisions, and improved surgical precision. In contrast, our study exclusively evaluated total abdominal hysterectomy, an open surgical approach that inherently involves greater vascular exposure and potential for bleeding.

Also, the patient characteristics, such as the size and vascularity of fibroids, may have contributed to the difference. Larger or more vascular fibroids as documented in our inclusion criteria, typically increase the risk of higher intraoperative blood loss. The difference in preoperative management such as the use of hormonal treatments or uterine artery embolization to reduce fibroid vascularity might also explain the lower blood loss reported by Seo, et al.

Sentilhes, et al. focused on effective blood management in surgeries with significant blood loss, which is crucial for minimizing complications during TAH [18]. Zheng, et al reported that the total laparoscopic hysterectomy (TLH) offers reduced blood loss, and quicker recovery compared to TAH, highlighting the advantages of minimally invasive methods [19] while Asati, et al reported that while TAH effectively manages fibroids, it has higher complication rates than other techniques underlining the need to assess patient suitability for less invasive options [20].

Ferrari, et al showed that laparoscopically assisted vaginal hysterectomy (LAVH) results in shorter hospital stays and fewer complications compared to TAH [21]. Wang et al. (2017) noted that laparoscopic hysterectomy better preserves ovarian function, important for premenopausal patients [22].

A combination of these studies demonstrates TAHs safety; yet also suggest the recovery is slower, and carries an increased complication rate than the current techniques.

Numerous recommendations can be put forth to improve the outcomes of those undergoing total abdominal hysterectomy (TAH) for uterine fibroids. This starts with a detailed preoperative assessment to assess the patient for overall health and whether TAH is the correct surgical treatment option for the patient. It should consist of screening for comorbidities, assessment of blood parameters, and surgical risk evaluation. As appropriate, patients should be offered minimally invasive options such as total laparoscopic hysterectomy (TLH) or laparoscopically assisted vaginal hysterectomy (LAVH), for which advantages of less operative blood loss, faster recovery, and lower complication rates have been reported.

Strengths of this study include the clear selection of a patient population with strict inclusion criteria, highly pertinent to patients with symptomatic uterine fibroids who required TAH, and comprehensive assessment of both intra-operative and postoperative outcomes (blood loss, complication, length of hospital admission). Furthermore, the quality of surgery, which factors into the results, relies on the expertise of the surgical team. Despite the powerful data, the single-center nature of the design does limit its generalizability, and given the nature of this study, a comparison group to place TAH outcomes in context to those of minimally invasive techniques is lacking. In addition, the study does not assess long-time postoperative results such as quality of life or mental effects. To enhance generalizability, future studies should be multicenter and include thorough comparison of TLH or LAVH and have long-term follow-up to evaluate quality of life and symptom resolution.

Intraoperative blood management requires the adoption of good practices (e.g., tranexamic acid administration, meticulous surgical technique) to reduce blood loss and the risk of bleeding-related postoperative complications. Postoperative care must comprise pain control, minimization of infection, and early mobilization to facilitate recovery. In such premenopausal women, it may be necessary to avoid excessive removal of ovarian tissue in order to prevent hormonal imbalance after surgery. Also, education and counseling of patients are crucial to establishing realistic expectations and informing patients if they experience any complications and how the recovery ability proceeds. Finally, better surgical choices based on individual needs with optimized patient outcomes can be achieved if surgeons are trained in both open and minimally invasive techniques.

CONCLUSION

The study concluded that total abdominal hysterectomy appears to be a safe and effective treatment option for women with symptomatic uterine fibroids. The surgery was well tolerated by the majority of patients with less complications. Overall, it was associated with an acceptable intra-operative blood loss and duration of hospital stay and can be regarded as a non-compromising surgical procedure in a tertiary care set up

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Table I: Characteristics of Study Participants (n=159)	
Variable	**n (%)**
Age (Mean ± SD) = 38.43 ± 10.53	
20 - 40 years	111 (69.8)
>40 years	48 (30.2)
Hemoglobin (Mean ± SD) = 11.25 ± 1.91	
8 - 12 g/dl	104 (65.4)
>12 g/dl	55 (34.6)
Hematocrit (Mean ± SD) = 37.26 ± 4.14	
30 - 40 %	139 (87.4)
>40 %	20 (12.6)
Marital Status	
Married	131 (82.4)
Unmarried	28 (17.6)
Preoperative Blood Transfusion	
Yes	25 (15.7)
No	134 (84.3)
Preoperative Hormonal Treatment Received	
Yes	34 (21.4)
No	125 (78.6)
Indications for Surgery	
Abnormal Uterine Bleeding	120 (75.5)
Chronic Pelvic Pain	47 (29.6)
Dysmenorrhea	42 (26.4)
Infertility	21 (13.2)
Dyspareunia	14 (8.8)
Backache	11 (6.9)
Acute Pelvic Pain	5 (3.1)

Table II: Surgical Outcomes in Patients Undergoing Total Abdominal Hysterectomy (n=159)	
Estimated Intra-operative Blood Loss in ml, Mean ± SD	550.25 ± 82.87
Duration of Operating Time in mins, Mean ± SD	125.53 ± 27.28
Duration of Hospital Stay in days, Mean ± SD	6.25 ± 1.54
Visceral injury, n (%)	
Yes	6 (3.8)
No	153 (96.2)
Blood Transfusion, n (%)	
Yes	35 (22.0)
No	124 (78.0)
Fever, n (%)	
Yes	16 (10.1)
No	143 (89.9)