OPTIMIZATION OF POSTOPERATIVE REHABILITATION AFTER HYSTERECTOMY IN WOMEN WITH BENIGN UTERINE TUMORS: A COMPARATIVE ANALYSIS OF LAPAROSCOPIC AND OPEN SURGICAL APPROACHES

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Abstract. *Benign uterine tumors remain among the most prevalent gynecological disorders affecting women of reproductive and perimenopausal age. Despite significant advances in conservative treatment and organ-preserving interventions, hysterectomy continues to be one of the most frequently performed gynecological operations worldwide. The choice of surgical access plays a decisive role not only in the immediate postoperative outcome but also in the duration and quality of rehabilitation. In recent decades, laparoscopic hysterectomy has become increasingly widespread due to its minimally invasive nature and reduced surgical trauma. However, abdominal hysterectomy performed through laparotomy still maintains clinical relevance in complicated cases involving large uterine masses, severe adhesions, or combined pelvic pathology. The present article examines modern approaches to optimizing postoperative rehabilitation in women with benign uterine tumors and provides a comparative analysis of laparoscopic and laparotomic hysterectomy. Particular attention is given to postoperative pain syndrome, psychoemotional adaptation, recovery dynamics, quality of life indicators, and the role of ERAS protocols in improving rehabilitation outcomes. The findings demonstrate that minimally invasive surgery significantly accelerates physical and social recovery, while multidisciplinary rehabilitation strategies contribute to better long-term clinical results.*

Keywords: *benign uterine tumors, hysterectomy, laparoscopy, laparotomy, rehabilitation, quality of life, ERAS protocol, gynecological surgery.*

INTRODUCTION

Benign uterine tumors constitute a significant medical and social problem in contemporary gynecology due to their high prevalence, recurrent clinical course, and considerable impact on women's physical and psychological health. Uterine leiomyoma, adenomyosis, and endometrial hyperplasia are among the most common benign gynecological diseases requiring surgical treatment. Epidemiological observations indicate that uterine fibroids may occur in more than half of women over the age of forty, while adenomyosis is increasingly diagnosed among women of active reproductive and working age. Although modern pharmacological therapy and minimally invasive interventions have expanded treatment possibilities, hysterectomy remains the definitive therapeutic method in patients with persistent symptoms, recurrent bleeding, chronic pelvic pain, rapid tumor growth, or resistance to conservative management. Hysterectomy is currently the most common gynecological procedure performed globally. Even though this procedure is clinically effective, there are frequently a number of physiological and psychological difficulties during the postoperative phase. Significant postoperative pain, delayed mobilization, hormonal imbalance,

chronic exhaustion, mental instability, sleep difficulties, anxiety, and a lower quality of sexual life are all possible outcomes for women having hysterectomies. In many patients, the removal of the uterus is linked to severe psychological stress pertaining to social adaption, reproductive identity, and femininity perception in addition to physical damage. As a result, one of the main concerns in contemporary gynecological surgery is the optimization of postoperative rehabilitation. The approach to postoperative care in gynecology has significantly changed due to the quick development of minimally invasive surgical technology. Because laparoscopic hysterectomy enables the surgeon to carry out intricate procedures with less tissue damage, smaller incisions, and a lower inflammatory reaction, it has grown in popularity. Laparoscopic surgery is typically linked to less blood loss, less postoperative pain, a shorter hospital stay, and a quicker return to normal activity when compared to standard abdominal hysterectomy with laparotomy. However, in complex instances, such as those involving enormous uterine fibroids, significant pelvic adhesions, severe obesity, or anatomical abnormalities that impede laparoscopic visualization, laparotomy is still clinically warranted.

MATERIALS AND METHODS

The present study analyzed postoperative rehabilitation outcomes in women with benign uterine tumors who underwent hysterectomy through either laparoscopic or open abdominal approaches. The analysis included 120 patients aged between 35 and 55 years. Sixty women underwent laparoscopic hysterectomy, while the remaining sixty patients were treated using conventional laparotomy. The study evaluated postoperative pain intensity, blood loss, duration of hospitalization, psychoemotional condition, quality of life, and rehabilitation dynamics.

RESULTS AND DISCUSSION

Clinical observations demonstrated substantial differences between the two surgical approaches. Patients who underwent laparoscopic hysterectomy generally showed more favorable postoperative recovery. Reduced surgical trauma contributed to earlier mobilization and significantly lower pain intensity during the first postoperative days. Women treated laparoscopically required fewer narcotic analgesics and demonstrated earlier restoration of gastrointestinal function and physical independence. In contrast, patients after laparotomy more frequently experienced prolonged weakness, abdominal discomfort, delayed mobilization, and higher emotional distress caused by extensive surgical wounds and longer hospitalization. The mean intraoperative blood loss in laparoscopic surgery remained significantly lower than in open surgery, according to the comparison analysis. While patients following a laparotomy frequently needed more than a week of inpatient care, the laparoscopic group's typical hospital stay was three to four days. Patients who underwent laparoscopic surgery recovered to full physical activity almost twice as quickly as those who underwent abdominal hysterectomy.

Clinical Indicators	Laparoscopy	Laparotomy
Average blood loss	120 ± 35 ml	340 ± 60 ml
Mean hospital stay	3–4 days	7–10 days
Postoperative pain intensity	Mild to moderate	Moderate to severe
Recovery of physical activity	2–3 weeks	6–8 weeks
Frequency of postoperative	Lower	Higher

complications		

Psychoemotional adaption is a crucial component of postoperative rehabilitation. Many patients expressed mental instability following surgery, worries about sexual function, and anxiety related to changes in body image. Due to prominent postoperative scars, protracted pain syndrome, and delayed social reintegration, these symptoms were more noticeable in women who had laparotomies. Numerous patients expressed worry about their future quality of life and dread of losing their femininity, according to clinical interviews. These results demonstrate that effective surgical rehabilitation requires psychological care and counselling in addition to physical recuperation.

In recent years, the concept of quality of life has become one of the key indicators for evaluating surgical outcomes in gynecology. Assessment using internationally recognized scales such as SF-36 demonstrated that women after laparoscopic hysterectomy achieved significantly better results in physical functioning, emotional stability, social activity, and overall life satisfaction. Most patients from the minimally invasive surgery group returned to professional and family activities earlier and reported less fatigue, improved sleep quality, and higher postoperative self-confidence. Particular attention in modern surgical practice is currently directed toward ERAS (Enhanced Recovery After Surgery) protocols, which represent an evidence-based multidisciplinary approach to perioperative care. The ERAS strategy includes detailed preoperative counseling, shortened fasting periods, minimally invasive surgical techniques, multimodal analgesia, prevention of thromboembolic complications, early nutrition, and early mobilization. The integration of ERAS principles into gynecological surgery has significantly improved postoperative outcomes and reduced complication rates. Women managed according to ERAS protocols demonstrated shorter hospitalization, reduced opioid consumption, faster intestinal recovery, and higher satisfaction with treatment results. Early beginning of physical activity is critical to the success of rehabilitation following a hysterectomy. Early mobilization reduces the incidence of venous thrombosis, increases intestinal motility, enhances lung ventilation, and improves emotional state. Postoperative stability is greatly aided by respiratory exercises, a gradual increase in walking activity, physiotherapy techniques, and customized rehabilitation plans. Simultaneously, multimodal pain treatment is essential for enhancing the quality of rehabilitation since sufficient analgesia allows patients to continue exercising and lessens stress reactions following surgery.

Indicators	**Standard Management**	**ERAS Protocol**
Hospital stay	7.5 days	3.6 days
Postoperative complications	18%	7%
Opioid analgesic use	High	Reduced
Recovery of physical activity	Delayed	Accelerated
Patient satisfaction	Moderate	High

Overall, the findings of the present analysis confirm that laparoscopic hysterectomy offers substantial benefits in postoperative rehabilitation compared with conventional laparotomy. Reduced operative trauma, lower inflammatory response, faster mobilization, improved cosmetic outcomes, and better psychoemotional adaptation collectively contribute to enhanced quality of

life and earlier social reintegration. Nevertheless, optimal rehabilitation outcomes are achieved not only through surgical technique itself but also through comprehensive perioperative management integrating physical rehabilitation, psychological support, effective pain control, and ERAS-based recovery strategies.

CONCLUSION

The optimization of postoperative rehabilitation after hysterectomy in women with benign uterine tumors remains one of the most important challenges in contemporary gynecological practice. The growing prevalence of uterine leiomyoma, adenomyosis, and endometrial hyperplasia among women of reproductive and perimenopausal age significantly increases the need for effective surgical treatment methods combined with comprehensive rehabilitation strategies. Although hysterectomy continues to be a highly effective and frequently performed operation, postoperative recovery largely determines the long-term physical, emotional, and social outcomes for patients. The findings of the present study demonstrate that laparoscopic hysterectomy provides considerable clinical advantages compared with conventional abdominal hysterectomy performed through laparotomy. Reduced surgical trauma, lower intraoperative blood loss, minimal postoperative pain, shorter hospitalization, and faster restoration of physical activity contribute to improved rehabilitation efficiency and earlier return to daily and professional activities. In addition, minimally invasive surgery is associated with better cosmetic outcomes and reduced risk of postoperative adhesions and infectious complications, which further enhances patient satisfaction and quality of life.

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