MEDWIN PUBLISHERS
Committed to Create Value for Researchers

Nursing & Healthcare International Journal
ISSN: 2575-9981

Impact of Comprehensive Care on the Recovery and Quality of Life in Patients with Uterine Prolapse after Laparoscopic Abdominal Wall Linear Suspension: A Quasi-Experimental Study

Wang K*, Guo S, Zhang S, Sun K and Wang K

Department of Obstetrics and Gynecology, China-Japan Friendship Hospital, China

***Corresponding author:** Kun Wang, Department of Obstetrics and Gynecology, China-Japan Friendship Hospital, Beijing, China, Tel: +86-18611599909; Email: wangkun20080801@163.com

Research Article

Volume 8 Issue 2

Received Date: March 18, 2024

Published Date: April 15, 2024

DOI: 10.23880/nhij-16000310

Abstract

Introduction: To explore the impact of comprehensive care on the recovery and quality of life (QOL) in patients with uterine prolapse after laparoscopic abdominal wall linear suspension.

Material and Methods: This quasi-experimental study included patients with uterine prolapse scheduled to undergo abdominal wall linear suspension at the Department of Obstetrics and Gynecology of the China–Japan Friendship Hospital between January 2015 and June 2020. The primary outcomes were time of getting out of bed, postoperative pain duration, and hospital stay. The secondary outcome was postoperative QOL.

Results: A total of 90 patients included were divided into the conventional care group (n = 45, age 67.78 ± 3.88 years) and the comprehensive care group (n = 45, age 68.51 ± 3.52 years). They were comparable in demographic and baseline clinical characteristics (all $P > 0.05$). The time of getting out of bed (12.28 ± 0.83 vs. 18.87 ± 0.95, $P < 0.001$), postoperative pain duration (2.91 ± 0.33 vs. 4.31 ± 0.11, $P < 0.001$), and hospital stay (4.56 ± 0.61 vs. 5.67 ± 0.74, $P < 0.001$) were significantly shorter in the comprehensive care group than those in the conventional care group. The postoperative QOL was significantly higher in the comprehensive care group compared with that in conventional care group (95.00 ± 1.26 vs. 87.44 ± 2.57, $P < 0.001$).

Conclusion: Comprehensive perioperative nursing intervention in laparoscopic abdominal wall linear suspension might alleviate postoperative pain, accelerate recovery, and improve postoperative QOL in patients with uterine prolapse.

Keyword: Abdominal Wall Linear Suspension; Perioperative Nursing; Quasi-Experiment Study; Uterine Prolapse; Quality of Life

Abbreviations: POP: Pelvic Organ Prolapse; QOL: Quality of Life; BMI: Body Mass Index; SD: Standard Deviation.

Key Message

1. Comprehensive perioperative nursing intervention in laparoscopic abdominal wall linear suspension might alleviate postoperative pain, accelerate recovery, and improve postoperative quality of life in patients with uterine prolapse.
2. The comprehensive perioperative nursing intervention was recommended for patients with uterine prolapse after laparoscopic abdominal wall linear suspension.

Introduction

Pelvic organ prolapse (POP) is a common gynecological disease with symptoms of bladder, bowel, and sexual dysfunction in adult women [1,2]. Uterine prolapse, as a common form of POP, occurs in about 14.2% of women [3,4]. Surgery is the mainstay of treatment for uterine prolapse [5]; however, surgery typically involves the risk of complications, and patients are extremely vulnerable to relapse [6,7]. However, surgical techniques, including vaginal hysterectomy with vaginal anterior and posterior wall repair, high sacroiliac ligament shortening fixation, uterine round ligament shortening, and sacrospinous ligament suspension, have been developed to improve patient outcomes [8]. The surgery can also lead to some serious complications such as damage to the ureter, rectum, and presacral venous plexus. Perioperative nursing is of vital importance for the rehabilitation of patients [9,10]. However, conventional care does not improve prognosis, and the morbidity rate remains high [11]. Mesh erosion or extrusion can cause serious complications, such as infections and chronic pelvic pain [12,13]. The United States Food and Drug Administration (U.S. FDA) has repeatedly issued safety warnings regarding mesh-related complications [14,15]. Although transabdominal mesh implantation has not been restricted, related complications are unavoidable [16]. Starting from 2013, the Department of Obstetrics and Gynecology of our hospital carried out a new type of comprehensive care for laparoscopic abdominal wall linear suspension. This study aimed to explore the impact of comprehensive care on the recovery and quality of life (QOL) of patients with laparoscopic abdominal wall linear prolapse after laparoscopic uterine suspension.

Material and Methods

Study Design and Patients

This quasi-experimental study included patients with uterine prolapse at the Department of Obstetrics and Gynecology of the China–Japan Friendship Hospital between January 2015 and June 2020.

The Inclusion Criteria were:

- Patients meeting the criteria for uterine prolapse [17] and able to communicate with the nursing staff, and
- Patients with no underlying diseases poorly controlled by drugs.

The Exclusion Criteria were:

- Patients with contraindications to surgery,
- Patients with malignant tumors, or
- Patients with severe heart, liver, or kidney dysfunction.

Intervention

The patients were divided into the comprehensive care group and the conventional care group after discussion with doctors. The laparoscopic abdominal wall linear uterine suspension [18] was performed by physicians with extensive experience. All patients received routine nursing (introduction of ward environment and system, umbilical cleaning, vaginal irrigation, and bowel preparation before the surgery) to alleviate patient tension. The surgeon or nurse introduced the routine laparoscopic surgery to patients in the conventional care group. Vital signs were routinely monitored until the morning of the first postoperative day. The patients were allowed to consume a liquid diet on the first postoperative day, followed by a semi-liquid diet on the second postoperative day, and then a gradual transition to a normal diet. The perineum was scrubbed twice a day and observed for the urinary catheter, the color, quantity, and properties of urine, vaginal bleeding, and perineal skin. The communication between the surgeon and the patients was maintained.

The comprehensive care group received comprehensive nursing care, specifically:

Preoperative Care: The principle, method, curative effect, and prognosis of laparoscopic abdominal wall linear suspension were introduced in detail to help patients relieve tension and enhance self-confidence. The nursing and prevention methods of postoperative complications were also introduced to encourage patients to cooperate with the whole perioperative nursing team. Before the surgery, the patients were informed about the postoperative pain they might experience.

Postoperative Care: The postoperative care included pain care, instruction related to postoperative activities, prevention of deep vein thrombosis in the lower extremities, and urinary catheter care.

Pain Care: After the surgery, the patients were repatriated to the ward, 50 mg flurbiprofen axetil was injected intravenously to relieve pain, and a dynamic pain assessment was performed. The patient was instructed to change the body position, reduce the degree of stretch, and relieve the pain. If the pain was still not relieved, the complications such as intra-abdominal bleeding were excluded, following which flurbiprofen axetil was injected to relieve the pain again according to the nature of the pain and the doctor's advice.

Instruction Related to Postoperative Activities: The patients with uterine prolapse were mainly elderly women. The patients were encouraged to exercise as soon as possible after the surgery to prevent complications such as pressure ulcers and deep vein thrombosis of lower extremities, as well as promote their recovery. They were instructed to perform ankle pump exercises and turn over on the bed independently when they were awake after the surgery. Patients who had difficulty moving were assisted in turning over at least once

every 2 h, and helped to get out of bed step by step 8-12 h after the surgery. First, the head of the bed was elevated by 30°, and then elevated to 60°, and further to 90° after adaptation. After fixing the pipeline, patients were assisted to stand and their complexion and state were monitored, to prevent the occurrence of falls caused by orthostatic hypotension.

Prevention of Deep Vein Thrombosis in the Lower Extremities: The patients with uterine prolapse were basically more than 40 years old, and the operation time was generally more than 45 min. Therefore, they belonged to the high-risk group of thrombosis, which was assessed using the Caprini score [19], except in the postoperative period. Patients with a high risk of thrombosis were subcutaneously injected with enoxaparin sodium or nadroparin calcium and wore an antithrombotic gradient pressure belt to prevent the occurrence of lower-extremity deep vein thrombosis as prescribed by the doctor within 24 h after the surgery.

Urinary Catheter Care: Generally, patients undergoing vaginal anterior and posterior wall repair should retain the urinary catheter for 3-5 days. After the surgery, the urinary catheter was fixed on the thigh using a raised platform method, and the anti-reflux urine bag was replaced by an aseptic surgery. For pressure injury, the chitosan functional dressing was sprayed after perineal scrubbing, thereby providing a protective effect. Residual urine B-ultrasound examination was performed after removing the urinary catheter, and the patients were instructed to urinate before the examination.

Outcomes and Measurement

The primary outcomes were time of getting out of bed, postoperative pain duration, and hospital stay. The secondary outcome was postoperative QOL. The time of getting out of bed was defined as the time from postoperative return to the ward to the first time on the ground, and postoperative pain duration was defined as the time from postoperative return to the ward to the time when pain disappeared. Pain disappearance was defined as VAS ≤ 2. The QOL of patients was assessed by a trained staff member who was blind to grouping using the self-made quality-of-life scale, including physical health, mental health, social functions, spiritual beliefs, and treatment compliance, with a total score of 100 points. The higher the score, the better the QOL. The demographic characteristics (including age, body mass index [BMI], and deliveries) and baseline clinical characteristics (including diabetes mellitus, cardiovascular disease, postmenopausal stage, and POP stage) were also collected.

Statistical Analysis

SPSS 21.0 statistical software (IBM, NY, USA) was used for statistical analysis. Continuous data were expressed as mean ± standard deviation (SD) and compared using the independent student t test. Categorical data were expressed as n (%) and compared by $\chi 2$ test. A two-sided $P < 0.05$ was considered statistically significant.

Ethics Statement

This work has been carried out in accordance with the Declaration of Helsinki (2000) of the World Medical Association. This study was approved by the ethics committee of China-Japan Friendship Hospital (13-05), and written informed consent was obtained from all patients.

Results

A total of 112 patients were screened for the study. Among these, 12 were excluded due to the changes in surgical procedures, and 10 patients were lost to follow-up. Finally, 90 patients were enrolled and divided into two groups: conventional care group (n = 45, average age: 68.51 ± 7.56 years) and comprehensive care group (n = 45, average age: 67.78 ± 8.35 years). No significant differences were found in demographic and baseline clinical characteristics between the two groups (all $P > 0.05$) (Table 1).

Characteristics	Comprehensive Care Group (*n* = 45)	Conventional Care Group (*n* = 45)
Age (year)	67.78 ± 3.88	68.51 ± 3.52
BMI (kg/m^2)	24.96 ± 3.49	24.88 ± 2.72
Deliveries	2.78 ± 1.00	2.60 ± 1.01
Diabetes mellitus	9 (20.00)	10 (22.22)
Cardiovascular disease	22 (48.89)	27 (60.00)
Postmenopausa l stage	36 (80.00)	31 (68.89)
POP Stage		
II	8 (17.78)	10 (22.22)
III	36 (80.00)	33 (73.33)
IV	1 (2.22)	2 (4.44)

Table 1: The demographic and baseline clinical characteristic. (Data were expressed as mean ± standard deviation (SD) or n (%)). POP: Pelvic Organ Prolapse.

The time of getting out of bed in the comprehensive care group (12.28 ± 0.83) was significantly shorter than that in the conventional care group (18.87 ± 0.95) (P < 0.001). The postoperative pain duration was significantly lower in the comprehensive care group (2.91 ± 0.33) than that in the conventional care group (4.31 ± 0.11) (P < 0.001). The hospital stay was significantly shorter in the comprehensive care group (2.91 ± 0.33) than that in the conventional care group (4.31 ± 0.11) (P < 0.001). At baseline, no significant difference was observed in the QOL between the two groups (P = 0.060). And the postoperative QOL score was significantly higher in the comprehensive care group than that in the conventional care group (95.00 ± 1.26 vs. 87.44 ± 2.57, P < 0.001) (Table 2).

Characteristics	Comprehensive Care Group (*n* = 45)	Conventional Care Group (*n* = 45)	P
Time of getting out of bed (h)	12.28 ± 0.83	18.87 ± 0.95	<0.001
Postoperative pain duration (day)	2.91 ± 0.33	4.31 ± 0.11	<0.001
Average hospital stay (day)	4.56 ± 0.61	5.67 ± 0.74	<0.001
Preoperative QOL scores (score)	72.78 ± 1.55	73.29 ± 1.21	0.06
Postoperative QOL scores (score)	95.00 ± 1.26*	87.44 ± 2.57*	<0.001

Table 2: The outcomes of patients. (Data were expressed as mean ± standard deviation (SD). *: P<0.05 compared to preoperative QOL scores).
QOL: Quality of Life.

Discussion

This study showed that comprehensive nursing reduced the time of getting out of bed, postoperative pain duration, and hospital stay, and increased the postoperative QOL of patients. Altogether, the comprehensive perioperative nursing might improve the treatment effect of abdominal wall linear suspension, thus accelerating the recovery of patients. Uterine prolapse is one of the most common female diseases, which seriously affects the QOL of patients [20]. Laparoscopic uterine suspension with vaginal wall repair helps optimize the treatment for patients with middle pelvic defects who have the desire to preserve the uterus [18,21]. However, the awareness of patients regarding the specific surgical procedure and postoperative precautions is limited due to the short duration of the surgery. Additionally, most patients with severe uterine prolapse are older and have a longer disease course. Routine care ignores the needs of patients regarding psychology, pain, and prevention of complications, resulting in psychological or physical discomfort and prolonged hospitalization. In this study, patients in comprehensive nursing group received more careful communication, which provided patients with enough knowledge, comfort, and encouragement, enhancing patients' confidence in surgery, and making adequate psychological preparations.

Pain often occurs after trauma or surgery, seriously affecting physical and psychological comfort and the QOL of patients [22]. This study suggested that active dynamic pain assessment and timely analgesic interventions could shorten the duration of postoperative pain. Moreover, lower-extremity deep vein thrombosis is a post-surgical complication that can significantly hinder patient recovery [23]. Comprehensive nursing can reduce the possible complications [24,25]. Early lower body activity can accelerate blood circulation at the incision site, promote the venous return of the lower extremities, and accelerate incision healing [26]. Thus, the comprehensive nursing focused on urinary catheter care, lower-extremity deep vein thrombosis, and falling from bed. Interestingly, the time for getting out of bed and the postoperative recovery time reduced after guiding postoperative activities. Perioperative management has been reported to improve the survival and QOL of patients [27]. A previous study suggested that comprehensive management was vital to improving QOL in patients with cancer [28]. After comprehensive nursing, the QOL score of patients with uterine prolapse was significantly higher than that in the conventional care group. Furthermore, the preoperative symptoms were relieved or even disappeared, the psychology turned to a positive state, and patients were more interested in life. This study had some limitations. First, the grouping was not randomized, and patients discussed with the doctor to decide on nursing care, thus inducing bias. Second, the single-center design and sample size were limited. Hence, it is suggested to increase the sample size and conduct multi-center research. Third, the QOL of was patients was assessed using a self-made quality-of-life scale, which may induce bias.

Conclusion

In conclusion, comprehensive perioperative nursing intervention in laparoscopic abdominal wall linear uterine suspension might alleviate postoperative pain, accelerate recovery, and improve postoperative QOL in patients with uterine prolapse.

Author Contributions

Conceptualization: Saina Guo, Kun Wang; Methodology: Huan Yu; Formal analysis and investigation: Saina Guo, Huan Yu; Writing - original draft preparation: Saina Guo; Writing - review and editing: Saina Guo, Kun Wang; Funding acquisition: Saina Guo, Kun Wang; Resources: Shenao Zhang; Supervision: Kun Wang.

References

1. Jokhio AH, Rizvi RM, MacArthur C (2020) Prevalence of Pelvic Organ Prolapse in Women, Associated Factors and Impact on Quality of Life in Rural Pakistan: Population-based Study. BMC Womens Health 20(1): 82.

2. Chiang CH, Hsu CS, Ding DC (2021) The Comparison of Outcomes of Transvaginal Mesh Surgery with and without Midline Fascial Plication for the Treatment of Anterior Vaginal Prolapse: A Randomized Controlled Trial. J Clin Med 10(9): 1888.

3. Pedersen L, Glavind-Kristensen M, Bor P (2021) Clinical Relevance of Routine Transvaginal Ultrasound in Women Referred with Pelvic Organ Prolapse. BMC Womens Health 21(1): 26.

4. Hendrix SL, Clark A, Nygaard I, Aragaki A, Barnabei V, et al. (2002) Pelvic Organ Prolapse in the Women's Health Initiative: Gravity and Gravidity. Am J Obstet Gynecol 186(6): 1160-1166.

5. Denman MA, Gregory WT, Boyles SH, Smith V, Edwards SR, et al. (2008) Reoperation 10 years after Surgically Managed Pelvic Organ Prolapse and Urinary Incontinence. Am J Obstet Gynecol 198(5): e551-555.

6. American Urogynecologic Society's Guidelines Development Committee (2013) Guidelines for Privileging and Credentialing Physicians for Sacrocolpopexy for Pelvic Organ Prolapse. Female Pelvic Med Reconstr Surg 19(2): 62-65.

7. Hemming C, Constable L, Goulao B, Kilonzo M, Boyers D, et al. (2020) Surgical Interventions for Uterine Prolapse and for Vault Prolapse: The Two VUE RCTs. Health Technol Assess 24(13): 1-220.

8. Panico G, Campagna G, Caramazza D, Amato N, Ercoli A, et al. (2018) Laparoscopic High Uterosacral Ligament Suspension: An Alternative Route for a Traditional Technique. Int Urogynecol J 29(8): 1227-1229.

9. Tian Y, Lin J, Gao F (2021) The Effects of Comfort Care on the Recovery Quality of Oral and Maxillofacial Surgery Patients Undergoing General Anesthesia. Am J Transl Res 13(5): 5003-5010.

10. Wu MH, Liu CQ, Zeng XQ, Jia AN, Yin XR (2021) The Safety of Early Administration of Oral Fluid following General Anesthesia in Children Undergoing Tonsillectomy: A Prospective Randomized Controlled Trial. BMC Anesthesiol 21: 13.

11. Wang H, Zheng T, Chen D, Niu Z, Zhou X, et al. (2019) Impacts of the Surgical Safety Checklist on Postoperative Clinical Outcomes in Gastrointestinal Tumor Patients: A Single-center Cohort Study. Medicine 98(28): e16418.

12. Veit-Rubin N, Dubuisson JB, Ageron AG, Lange S, Eperon I, et al. (2017) Patient Satisfaction after Laparoscopic Lateral Suspension with Mesh for Pelvic Organ Prolapse: Outcome Report of a Continuous Series of 417 Patients. Int Urogynecol J 28(11): 1685-1693.

13. MJ Jeon, DH Suh, CH Kim, H Cho, J Shin, et al. (2020) Non-absorbable Versus Absorbable Sutures for Anterior Colporrhaphy: Study Protocol for a Randomised Controlled Trial in South Korea. BMJ Open 10(6): e034218.

14. U.S. Food and Drug Administration (2022) Pelvic Organ Prolapse (POP): Surgical Mesh Considerations and Recommendations.

15. U.S. Food and Drug Administration (2022) FDA's Activities: Urogynecologic Surgical Mesh.

16. J Walter (2019) A Comparison of the Use of Mesh to Native Tissue in the Management of Vaginal Vault Prolapse. Best Pract Res Clin Obstet Gynaecol 54: 73-88.

17. Geoffrion R, Larouche M (2021) Guideline No. 413: Surgical Management of Apical Pelvic Organ Prolapse in Women. J Obstet Gynaecol Can 43(4): 511-523.

18. Liang J, Chen G, Deng L, et al. (2017) Laparoscopic Extraperitoneal Uterine Suspension with Suture Line Instead of Mesh. BJOG 124(3): 64-70.

19. Jinghe L, Chen W, Hong Q (2017) Expert Consensus on the Prevention of Deep Vein Thrombosis and Pulmonary Embolism after Gynecological Surgery. Chinese Journal of Obstetrics and Gynecology 52(10): 649-653.

20. Badacho AS, Lelu MA, Gelan Z, Woltamo DD (2022) Uterine Prolapse and Associated Factors among Reproductive-age Women in South-west Ethiopia: A Community-based Cross-sectional Study. PLoS One 17(1): e0262077.

21. Candy JW (1976) Modified Gilliam Uterine Suspension using Laparoscopic Visualization. Obstet Gynecol 47(2):

242-243.

22. Wang Y, Wang X, Zhang K (2020) Correction to: Effects of Transversus Abdominis Plane Block Versus Quadratus Lumborum Block on Postoperative Analgesia: A Meta-Analysis of Randomized Controlled Trials. BMC Anesthesiol 20(1): 128.

23. Cerruto MA, D'Elia C, Piccoli M, Cacciamani G, De Marchi D, et al. (2016) Association between Postoperative Thromboembolism Prophylaxis and Complications following Urological Surgery. Exp Ther Med 11(1): 157-163.

24. Lu J, Xiao D, Sun J, Huang J (2021) Effect of Comprehensive Nursing on the Appearance and Recovery Effect of Oral Squamous Cell Carcinoma Patients. Am J Transl Res 13(5): 5519-5525.

25. Luo T, Chen X, Wang D (2021) Effect of Predictive Nursing Combined with Amiodarone on the Treatment of Tachyarrhythmia in Patients with Coronary Heart Disease. Am J Transl Res 13(5): 4987-4994.

26. Costa RB, Dos Santos ER, Lopes CT, Bergamasco EC (2016) Adequacy of the Activities in the Nursing Intervention Exercise Therapy: Ambulation for Medical-Surgical Patients with Impaired Physical Mobility. Int J Nurs Knowl 27(4): 201-204.

27. Mack MJ, Acker MA, Gelijns AC, Overbey JR, Parides MK, et al. (2017) Effect of Cerebral Embolic Protection Devices on CNS Infarction in Surgical Aortic Valve Replacement: A Randomized Clinical Trial. JAMA 318(6): 536-547.

28. Ohgishi M, Horiba Y, Watanabe K (2016) Post-gastrectomy Syndrome Successfully Treated with Kampo Medicine: A Case Report. Glob Adv Health Med 5(1): 112-116.