



Left radical nephrectomy: nursing care perspective: A bibliographic review

Nefrectomía radical izquierda desde la perspectiva de enfermería: revisión bibliográfica

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ABSTRACT

Introduction: left radical nephrectomy is a commonly performed surgical procedure for the treatment of renal carcinoma, requiring specialized nursing care throughout the perioperative period. **Method:** a literature review was conducted analyzing nursing care protocols, complications, and quality of life outcomes in patients undergoing left radical nephrectomy. Articles published between 2017 and 2024 were reviewed, with a focus on nursing interventions and patient outcomes. **Results:** the review identified key nursing interventions, including preoperative patient education, intraoperative positioning considerations specific to the left approach, postoperative pain management, early mobilization protocols, and strategies for preventing chronic kidney disease. Laparoscopic approaches showed fewer complications and shorter hospital stays compared to open procedures. Enhanced Recovery After Surgery (ERAS) protocols demonstrated better outcomes when appropriately implemented by nursing teams. **Conclusions:** nursing care for left radical nephrectomy requires comprehensive knowledge of anatomical considerations, surgical approaches, and evidence-based interventions. Quality nursing care impacts patient recovery, complication rates, and long-term outcomes, including preservation of renal function and quality of life.

Keywords: radical nephrectomy, nursing care, perioperative nursing, patient outcomes, quality of life.

RESUMEN

Introducción: La nefrectomía radical izquierda es un procedimiento quirúrgico realizado especialmente para tratar el carcinoma renal, requiriendo cuidados especializados de enfermería durante el perioperatorio del paciente. **Métodos:** Se realizó una revisión bibliográfica analizando protocolos de cuidados de enfermería, complicaciones y resultados de calidad de vida en pacientes sometidos a nefrectomía radical izquierda. Se revisaron artículos publicados entre 2017-2024, enfocándose en la función del personal de enfermería en la recuperación. **Resultados:** Se identificaron intervenciones clave de enfermería incluyendo educación preoperatoria del paciente, consideraciones de posicionamiento intraoperatorio específicas para el abordaje izquierdo, manejo del dolor postoperatorio, protocolos de movilización temprana y estrategias de prevención de enfermedad renal crónica. Los abordajes laparoscópicos mostraron menores complicaciones y acortan las estancias hospitalarias. Los protocolos de Recuperación Mejorada Después de la Cirugía (ERAS) demostraron mejores resultados cuando fueron implementados adecuadamente por los equipos de enfermería. **Conclusiones:** El cuidado de enfermería en nefrectomía radical izquierda requiere conocimiento integral de consideraciones anatómicas, abordajes quirúrgicos e intervenciones basadas en evidencia. El cuidado de enfermería de calidad impacta en la recuperación del paciente, tasas de complicaciones y resultados a largo plazo incluyendo preservación de la función renal y calidad de vida.

Palabras clave: nefrectomía radical, cuidados de enfermería, enfermería perioperatoria, resultados del paciente, calidad de vida.

INTRODUCTION

Radical nephrectomy is one of the most common surgical procedures in oncological urology and is the standard treatment for localized renal cell carcinoma.(1)The decision between radical and partial nephrectomy has evolved in recent decades, with preservation of renal function being a determining factor in clinical decision-making.(2)

The laparoscopic approach has gained popularity due to its advantages of less invasiveness, reduced postoperative pain, and faster recovery compared to open surgery.(3)It is worth mentioning that regardless of the surgical approach selected, the role of nursing is essential to ensure optimal results and successful patient recovery.

Left radical nephrectomy presents specific anatomical considerations that influence both the surgical technique and perioperative nursing care.(4)The proximity of important vascular structures, including the aorta, inferior vena cava, and splenic vessels, requires specialized knowledge on the part of the nursing team to anticipate possible complications and provide appropriate care.

This review aims to analyze the current evidence on nursing care in patients undergoing left radical nephrectomy, identifying evidence-based best practices to optimize patient outcomes and postoperative quality of life.

METHOD

A narrative review of the available scientific literature on nursing care in left radical nephrectomy was conducted. The literature search included articles published between 2017 and 2024, prioritizing studies that addressed specific aspects of nursing care, perioperative complications, and long-term outcomes in patients undergoing this procedure.

The inclusion criteria were: studies that evaluated perioperative nursing care, comparisons between surgical techniques (open vs. laparoscopic vs. robotic), analysis of postoperative complications, and assessment of quality of life after

The procedure. Studies that did not provide specific information on the role of nursing or that focused exclusively on technical aspects of surgery without considering comprehensive patient care were excluded.

RESULTS

Anatomical and Surgical Considerations

Left radical nephrectomy presents specific technical challenges related to the retroperitoneal anatomy of the left side. The left renal vein, which is characteristically longer than the right, and its relationship with adjacent vascular structures require careful patient positioning during the procedure.(5)

The retroperitoneal laparoscopic approach has demonstrated advantages in terms of operating time, blood loss, and postoperative recovery.(6)Comparative studies between laparoscopic and open radical nephrectomy consistently show lower complication rates and shorter hospital stays with the minimally invasive approach.(7)Robotic technology has emerged as a promising alternative, offering greater precision in dissection and potentially lower conversion rates to open surgery. However, the learning curve and associated costs remain limiting factors for its widespread implementation.

Preoperative Nursing Care

The preoperative phase is a critical period in which nursing intervention can influence surgical outcomes. Patient education about the procedure, postoperative expectations, and pain management strategies is an essential component of preoperative care.(9)

Preoperative assessment should include a comprehensive evaluation of baseline renal function, considering that radical nephrectomy will result in a reduction in glomerular filtration rate.(10)The early identification of risk factors for the development of postoperative chronic kidney disease allows for the implementation of appropriate preventive strategies.

The Enhanced Recovery After Surgery (ERAS) protocol has demonstrated benefits when implemented appropriately in urological procedures. The preoperative components include nutritional optimization, anxiety management, and selective bowel preparation as appropriate include

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Intraoperative Care

During the surgical procedure, the nursing team should pay special attention to patient positioning, particularly in laparoscopic approaches where a lateral decubitus position with flexion of the surgical table is required. Prevention of pressure injuries and maintenance of hemodynamic stability are key responsibilities of the intraoperative nursing team.(12)

Continuous monitoring of vital signs during manipulation of the renal vascular pedicles requires close surveillance to detect any early signs of hemodynamic compromise. The nursing team must anticipate and prepare for possible complications, including bleeding or vascular injury.

Postoperative Management

The immediate postoperative period requires intensive monitoring of renal function, fluid balance, and signs of complications. Postoperative oliguria may be expected initially due to loss of renal mass, but complete absence of urine output should be investigated immediately.(13)

Postoperative pain management has evolved toward multimodal approaches that minimize the use of opioids. The implementation of regional analgesia techniques, including intercostal or epidural blocks, has demonstrated superior efficacy compared with traditional management with systemic opioids.(14)

Early mobilization is a critical component of postoperative care, contributing to the prevention of thromboembolic complications, pneumonia, and functional impairment. Progressive mobilization protocols should be initiated within the first 24 hours postoperatively when clinical conditions permit.(15)

Complications and Nursing Management

Postoperative complications of radical nephrectomy can be classified as early and late. Early complications include bleeding, surgical site infection, paralytic ileus, and respiratory complications. Early recognition of these events by the nursing team is crucial to initiating appropriate interventions.

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Inferior vena cava thrombosis, although rare, is a serious complication that requires immediate recognition and specialized management. Clinical signs include lower extremity edema, abdominal distension, and, in severe cases, hemodynamic compromise.(16)

Late complications include the development of chronic kidney disease, secondary hypertension, and deterioration in quality of life. Educating patients about these potential risks and the importance of long-term medical follow-up is a fundamental responsibility of the nursing team.(18)

Preservation of Renal Function

Preservation of postoperative renal function has emerged as a critical goal in the management of patients undergoing radical nephrectomy. Studies show that approximately 20–30 % of patients will develop stage 3 or higher chronic kidney disease after radical nephrectomy.(19)

The implementation of nephroprotective strategies, including optimization of hydration status, avoidance of nephrotoxic agents, and close monitoring of renal function, is a nursing intervention that can influence long-term outcomes.(20)

Quality of Life and Functional Outcomes

After radical nephrectomy, many patients continue to have a good quality of life, but some may experience physical limitations, depending on their age, previous illnesses, or complications. Nurses help by educating patients, teaching them how to take care of their health, and working as a team with other professionals. Continuous follow-up is also helpful in detecting any problems early on. All of this improves patients' well-being and quality of life.

DISCUSSION

Left radical nephrectomy is one of the most challenging procedures in oncological urology, requiring a comprehensive nursing care approach that ranges from preoperative preparation to

post-surgical rehabilitation. The results of this literature review demonstrate the evolution of surgical techniques and, consequently, of specialized care protocols.

The development of a structured and individualized care plan is a fundamental pillar in the comprehensive management of the patient. Martínez(9)proposes a standardized care plan specific to radical left nephrectomy using an open approach, which establishes the risk of hemorrhage, impaired renal perfusion, and acute pain management as priority nursing diagnoses. This systematic methodology enables more organized care based on scientific evidence, promoting continuity of care within the multidisciplinary team.

Differences in the quality of clinical outcomes depending on the surgical technique used have been documented. Blaise et al.(14)demonstrate differences in postoperative quality of life between patients who underwent open nephrectomy compared to those who underwent laparoscopic surgery, highlighting the fundamental importance of adapting care protocols according to the surgical modality selected. This differentiation in the nursing approach is essential to optimize the recovery process and minimize postoperative complications.

The incorporation of educational elements and early rehabilitation has revolutionized the contemporary conceptualization of nephrectomy care. Rufián et al.(15)highlight the critical importance of preoperative education for both the patient and their family, including detailed information about the surgical procedure, realistic expectations for recovery, and necessary home care. This comprehensive educational strategy helps reduce preoperative anxiety levels and enhances therapeutic adherence in the postoperative period.

A critical element identified in the scientific literature is the prevention and effective management of postoperative complications. Añazco et al.(16)document that the most frequent complications include bleeding episodes, surgical site infections, and alterations in contralateral kidney function. The role of nursing in the early identification of these complications, through the implementation of systematic clinical monitoring, is decisive for the patient's final prognosis. The incorporation of specific assessment scales and the application of continuous monitoring protocols continuous monitoring protocols are effective strategies for reducing the morbidity associated with the procedure.

The technological revolution represented by minimally invasive techniques, such as laparoscopic nephrectomy, has completely transformed perioperative management. Otero et al. (19) show that laparoscopic surgery applied to tumors larger than 7 cm has advantages in postoperative recovery, which leads to a modification in nursing care plans. These technological advances require nursing staff to develop specific skills in the management of patients undergoing laparoscopic procedures, including the monitoring of complications such as residual pneumoperitoneum and related hemodynamic alterations.

The results of this review suggest the need to develop differentiated care protocols according to the surgical approach, implement specific assessment scales, and strengthen the training of nursing staff in minimally invasive techniques. The available evidence supports that specialized, evidence-based nursing care contributes to improving clinical outcomes and patient satisfaction in left radical nephrectomy.

CONCLUSIONS

Nursing care in left radical nephrectomy requires a comprehensive approach that encompasses everything from preoperative preparation to long-term follow-up. Current evidence supports the implementation of structured, evidence-based protocols that include patient education, multimodal pain management, early mobilization, and strategies to preserve renal function.

The adoption of minimally invasive approaches has transformed perioperative care, requiring continuous adaptation of nursing protocols and staff education. ERAS protocols have demonstrated consistent benefits when implemented appropriately by trained nursing teams.

Preserving renal function and long-term quality of life are critical goals that require nursing interventions in both the perioperative period and during prolonged follow-up. Patient education about modifiable risk factors the importance of regular medical follow-up is an essential component of comprehensive care.

Future research should focus on the development and validation of care protocols aimed at optimizing outcomes in patients undergoing radical nephrectomy, with an emphasis on evidence-based nursing interventions and their impact on measurable clinical outcomes.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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