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Perspective

Laparoscopic *versus* open radical nephrectomy and factors associated with catheter-related bloodstream infections

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DESCRIPTION

Over the past decade, the medical community has witnessed significant advancements in surgical techniques for radical nephrectomy, particularly in the area of laparoscopic and open procedures. Among the many factors influencing the choice between laparoscopic and open approaches, Catheter-Related Bloodstream Infections (CRBSIs) have emerged as a critical consideration. The choice between laparoscopic and open radical nephrectomy depends on various factors such as the patient's overall health, the size and location of the tumor, and the surgeon's expertise comparative analysis of laparoscopic *versus* open radical nephrectomy over the past ten years, focusing specifically on CRBSIs and associated factors.

Laparoscopic *versus* open radical nephrectomy

Laparoscopic Radical Nephrectomy (LRN) and Open Radical Nephrectomy (ORN) are both established surgical options for the treatment of renal cell carcinoma. LRN, characterized by smaller incisions and reduced tissue trauma, offers potential advantages such as shorter hospital stays, quicker recovery times, and less postoperative pain compared to ORN. Conversely, ORN, though more invasive, provides direct access to the renal vasculature and may be preferred in cases of large tumors or complex anatomies.

Catheter-Related Bloodstream Infections (CRBSIs)

CRBSIs represent a significant concern in the context of radical nephrectomy, particularly in patients requiring prolonged catheterization for perioperative management. These infections not only prolong hospital stays but also increase morbidity and mortality rates. The choice of surgical approach laparoscopic or open can influence the risk of CRBSIs due to variations in surgical duration, extent of tissue manipulation, and postoperative care requirements.

Comparative analysis

Several studies conducted over the past decade have sought to compare the incidence of CRBSIs following LRN and ORN. While findings have been somewhat varied, certain trends have emerged. Some studies have reported a lower incidence of CRBSIs following LRN, attributed to reduced tissue trauma and shorter catheterization durations. Conversely, others have found comparable infection rates between LRN and ORN, suggesting that surgical technique alone may not be the sole determinant of CRBSI risk.

Factors associated with CRBSIs

Beyond the choice of surgical approach, several factors have been identified as contributors to CRBSIs in the context of radical nephrectomy. Prolonged catheterization duration, inadequate perioperative antimicrobial prophylaxis, and pre-existing comorbidities such as diabetes mellitus and immunosuppression have all been implicated. Additionally, variations in surgical skill, perioperative care protocols, and hospital-acquired infection control measures can influence CRBSI rates irrespective of the surgical approach employed.

The comparative analysis of laparoscopic *versus* open radical nephrectomy over the past decade provides valuable insights into the management of CRBSIs and associated factors. While laparoscopic techniques offer certain advantages in terms of reduced tissue trauma and quicker recovery times, the choice of surgical approach must be carefully weighed against the risk of CRBSIs and individual patient factors. Moving forward, continued research efforts are needed to optimize perioperative protocols and minimize the incidence of CRBSIs in patients undergoing radical nephrectomy. Preventing CRBSIs involves careful insertion and maintenance of catheters, as well as adhering to strict infection control practices. Some strategies to prevent CRBSIs include proper hand hygiene, using sterile techniques during catheter insertion, regularly cleaning the catheter site, and regularly changing catheters and tubing. It's important for healthcare providers to follow strict sterile technique during catheter insertion to reduce the risk of complications such as urinary tract infections. Additionally, patients should be educated about catheter care and hygiene to minimize the risk of complications once the catheter is in place.

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