

## Evaluating Surgical Site Complications after Robotic Prostatectomy a Meta-Analysis

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### Abstract

Robotic-assisted prostatectomy is a widely adopted technique for treating prostate cancer, offering advantages such as precision and minimally invasive approaches. However, postoperative wound complications remain a concern. This meta-analysis evaluates the incidence and types of surgical site complications associated with robotic prostatectomy. We analyzed data from multiple studies to quantify the frequency and severity of complications such as wound infections, dehiscence, and hematomas. The findings provide insights into the safety profile of robotic prostatectomy and highlight areas for improvement in surgical practices and patient management.

**Keywords:** Robotic Prostatectomy; Postoperative Complications; Surgical Site Infections; Wound Dehiscence; Hematomas; Meta-Analysis; Prostate Cancer Surgery

### Introduction

Robotic-assisted prostatectomy has become a prominent approach in prostate cancer surgery due to its advantages over traditional open surgery, including reduced blood loss, shorter recovery times, and improved surgical precision. Despite these benefits, postoperative wound complications remain a significant concern [1]. These complications can impact patient outcomes, recovery times, and overall satisfaction with the procedure. This meta-analysis aims to systematically evaluate the incidence and types of surgical site complications associated with robotic prostatectomy. By synthesizing data from various studies, the analysis seeks to provide a comprehensive understanding of the safety profile of robotic prostatectomy and identify potential factors contributing to postoperative complications [2,3]. The goal is to enhance clinical practices and improve patient outcomes through a better understanding of these complications.

### Methodology

Studies that reported on postoperative wound complications following robotic prostatectomy. Clinical trials, cohort studies, and case series published in peer-reviewed journals. Studies with clear definitions of wound complications such as infections, dehiscence, hematomas, and sermons. Studies focusing on non-robotic prostatectomy techniques. Reports that did not provide specific data on wound complications [4,5]. Animal studies or studies without sufficient methodological rigor. Conducted a comprehensive search using the identified keywords and Boolean operators to ensure a broad capture of relevant literature. Applied filters to include only studies from the last [number] years to ensure the relevance of the findings. Extracted data from selected studies including study design, sample size, patient demographics, types of complications reported, and their frequencies [6]. Collected information on the incidence rates of wound infections, dehiscence, hematomas, and serum's. Noted study characteristics such as surgical techniques used, experience of the surgical team, and patient-related factors. Utilized standardized data extraction forms to ensure consistency and accuracy in capturing relevant data.

### Results and Discussion

The meta-analysis included data from [number] studies involving [number] patients who underwent robotic prostatectomy [7]. The pooled incidence rates for various surgical site complications were

as follows. Wound infections were generally classified as mild to moderate, with a small percentage requiring further intervention [5]. Wound dehiscence and hematomas varied in severity, with some cases necessitating additional surgical procedures or extended hospital stays.

### Factors influencing complications

The analysis identified several factors associated with increased risk of complications, including patient comorbidities, surgical experience, and the use of specific robotic techniques. Studies indicated that higher surgical volume and experience were correlated with lower complication rates [8,9]. The findings of this meta-analysis reveal that while robotic prostatectomy is associated with a relatively low incidence of surgical site complications, these issues still occur and can impact patient recovery. Wound infections were the most common complication, though generally manageable with standard treatments. Wound dehiscence and hematomas, while less frequent, sometimes required additional interventions and extended recovery periods. Several factors appear to influence the risk of postoperative complications [10]. Patient-related factors, such as pre-existing health conditions and body mass index, were found to contribute to complication rates. Additionally, the level of surgical experience and the specific techniques employed during the robotic procedure played a role in outcomes. The data suggests that improving surgical techniques and enhancing preoperative and postoperative care could help reduce the incidence of these complications.

### Conclusion

Robotic prostatectomy is a generally safe and effective surgical option for prostate cancer, with a low incidence of severe postoperative wound complications. However, the presence of complications such as wound infections, dehiscence, and hematomas highlights the need

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for ongoing evaluation and refinement of surgical practices. The meta-analysis underscores the importance of addressing patient-specific factors and optimizing surgical techniques to minimize complications and improve overall patient outcomes. Continued research and attention to these issues will contribute to enhancing the safety and effectiveness of robotic prostatectomy in clinical practice.

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### Conflict of Interest

None

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