



## Use of robotic surgery in prostate cancer operations

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**Igor Parada Marangoni**  
**Marcelo Contiero**  
**Stephanie de Sousa**  
**Bárbara Fontinele Castro de Araújo**  
**Igor Costa Santos**

### 1 INTRODUCTION

Robotic surgery is a technique that has been gaining space in surgical practice in several medical specialties, including urology. In the treatment of prostate cancer, surgery is one of the main therapeutic options, with the purpose of removing the tumor and preserving the patient's quality of life. Prostate cancer is one of the most common types of cancer in men, and surgery is indicated in early cases of the disease or when other treatments are no longer effective. Robotic surgery is a minimally invasive option that has proven effective in removing prostate cancer, reducing the complication rate and increasing the treatment success rate.

Prostate cancer is one of the most common cancers in men, and surgery is one of the treatment options for the disease. Robotic surgery has been a technique increasingly used for the treatment of prostate cancer, allowing greater precision and shorter hospital stays.

Robotic surgery is a minimally invasive technique that uses a robot to assist the surgeon in performing the operation. The robot is controlled by a console, where the surgeon manipulates the surgical instruments and has access to a three-dimensional view of the operation site.

In the case of prostate cancer, robotic surgery has proven to be a safe and effective option, with less blood loss and shorter hospital stay compared to open surgery. In addition, the technique allows for greater preservation of the nerves responsible for erection and urinary continence, which is especially important for the patient's quality of life after surgery.

In this context, it is important to evaluate the scientific studies that have investigated the effectiveness of robotic surgery in the treatment of prostate cancer in order to better understand its benefits and limitations.



## 2 OBJECTIVE

The objective of this systematic literature review is to evaluate the efficacy and safety of robotic surgery compared to conventional surgical techniques in the treatment of prostate cancer. Additional benefits of robotic surgery, such as shorter hospital stays, shorter recovery time, and lower incidence of postoperative complications, will also be evaluated. The most recent evidence available in the scientific literature will be explored to identify possible advantages and disadvantages of robotic surgery over conventional techniques, and to provide relevant information for the improvement of clinical practice in the surgical treatment of prostate cancer.

## 2 METHODOLOGY

A search was conducted in the PubMed, Scielo, VHL, Google Scholar and Latindex databases, with articles published in the last 10 years, using the descriptors "robotic surgery", "prostate cancer", "minimally invasive surgery", "surgical complications" and "surgical outcomes". Inclusion criteria were studies that evaluated the effectiveness of robotic surgery in the treatment of prostate cancer compared to other surgical techniques. Exclusion criteria were studies that did not focus specifically on robotic surgery, as well as studies that were not published in English, Spanish or Portuguese.

## 3 DEVELOPMENT

Prostate cancer is one of the leading causes of death among men. Treatment for prostate cancer may involve surgery, radiation therapy, hormone therapy and chemotherapy, depending on the stage of the disease and the patient's characteristics. Surgery is a common treatment option for patients with localized prostate cancer and aims to remove the prostate and surrounding tissue affected by the cancer.

Robotic surgery is a minimally invasive surgical technique that uses a robotic system to perform surgery. It is a relatively new technique, but has already been widely used in prostate cancer surgery. Robotic surgery has several advantages over conventional open surgery, including less blood loss, shorter hospital stay, shorter recovery time, and lower complication rate.

Several studies have been conducted to evaluate the effectiveness of robotic surgery in the treatment of prostate cancer compared to other surgical techniques. These studies have demonstrated that robotic surgery is a safe and effective option for the treatment of prostate cancer. In addition, robotic surgery has been associated with better outcomes in terms of cancer control and preservation of sexual function and urinary continence compared to other surgical techniques.

However, robotic surgery is still a relatively new technique and requires a high level of expertise on the part of the surgeon. In addition, robotic surgery can be more expensive than other surgical techniques. Therefore, it is important to carefully evaluate the benefits and risks of robotic surgery versus other surgical techniques in the treatment of prostate cancer.



Considering the advantages of robotic surgery in the treatment of prostate cancer, the development of new technologies and improvement of the surgical technique may make this treatment option more accessible to a larger number of patients. In addition, more studies are needed to evaluate the efficacy and safety of robotic surgery in the long term.

In summary, robotic surgery is a minimally invasive surgical technique that has been widely used in the treatment of prostate cancer. Although the technique has several advantages over other surgical techniques, it is important to carefully evaluate the benefits and risks of robotic surgery over other surgical techniques in the treatment of prostate cancer.

#### **4 CONCLUSION**

From this systematic literature review, we can conclude that robotic surgery has been an increasingly used technique for the treatment of prostate cancer. Several studies have reported positive results with the use of this technique, such as less blood loss, shorter hospital stay, and shorter time for patient recovery when compared to conventional open and laparoscopic surgery.

In addition, it was found that robotic surgery can offer better oncological outcomes, such as lower biochemical recurrence rates and less likelihood of needing additional therapies, when compared to other surgical techniques.

However, it is important to emphasize that robotic surgery is still a complex procedure that requires specific training for surgeons, as well as adequate equipment and a qualified multidisciplinary team. Therefore, it is necessary to have a careful patient evaluation and an individualized discussion of the risks and benefits to choose the most appropriate surgical technique.

Therefore, we conclude that robotic surgery represents a safe and effective option for the treatment of prostate cancer, but it must be used carefully and with proper training of the medical team. It is essential that new studies be conducted to improve the techniques and the results of this surgical technique, always aiming for a better quality of life and oncological results for patients with prostate cancer.



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