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Commentary

# Surgery Improvemnets for Patients with Benign Urological Disease

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## DESCRIPTION

Over the last ten years, urologists have been fast to adopt some of the most exciting technology breakthroughs in surgery. Though we were hesitant to embrace the laparoscopic revolution in the 1980s as a specialty, it is obvious that urologists have led some of the most inventive developments in minimally invasive surgery in recent years. The growth of robot-assisted surgery, particularly robot-assisted laparoscopic radical prostatectomy, is a perfect example of this. We will concentrate on the current status of robotic-assisted surgery for benign urological diseases rather than malignant urological conditions.

The PROBOT employed a robotic frame to guide a revolving blade through the prostate to perform transurethral excision (TURP). Clinical experiments in people were conducted after initial tests on prostate-shaped potatoes to demonstrate the technology's safety and feasibility. This was a completely self-contained device that met all of the criteria stated above. However, no significant differences were found when compared to traditional TURP. In a randomized control experiment of transatlantic tele robotics, the percutaneous renal access robot PAKY-RCM displayed higher accuracy but longer operational (access) times as compared to humans. This is still the only randomized control experiment comparing robotic vs. non-robotic surgical technology. However, while the technologies outlined are intriguing and thought-provoking, they have yet to be used in ordinary clinical practice.

The Vinci da surgical system (Intuitive Surgical, CA) is the robotic-assisted surgery system that has gotten the most attention. It was created in the late 1990s, at a time when there was already a competitor, the LEUS system. Rather than being a real autonomous robot, this is a master-slave system. The surgeon controls three or four robotic arms docked through the laparoscopic portals from a station away from the patient. Its purported advantages over traditional laparoscopic surgery include three-dimensional (3D) vision, seven Degrees of Freedom (DoF), and intuitive movements of the robotic instruments. This technique, as well as its benefits and drawbacks, are discussed in further detail elsewhere.

The growing popularity of Robotic-Assisted Radical Prostatectomy (RARP) for the treatment of localized prostate cancer is partly responsible for the massive increase in the number of robotic procedures reported worldwide. In 2004, approximately 20,000 robotic surgeries were conducted, up from about 1500 in 2000. Urology is the single-specialty that has had the most growth, with over 8000 robotic prostatectomies performed in 2004. RARP now accounts for more than 10% of radical prostatectomies performed in the United States, a figure that is rising year after year. We'll now look at how robotic-assisted surgery is becoming more common for benign urological diseases.

The majority of the researches on robotic-assisted urological treatments refers to Robot-assisted laparoscopic and Radical Prostatectomy, a surgery that is gaining popularity. Case studies and small cohort series dominate the literature on robotic-assisted surgery for benign urological disorders, making it difficult to make judgments about the merits or otherwise of robotic methods documented thus far. Robotic help, on the other hand, appears to have a promising future in laparoscopy. It has to be explored whether it reduces the learning curve, particularly for laparoscopic newbies. Robotic-assisted laparoscopy, in our experience, minimizes anastomotic periods and allows for a shorter postoperative hospital stay.

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