In less than a decade robotic assisted laparoscopic radical prostatectomy has rapidly become the most commonly performed surgical technique for prostate cancer. This year the number of robotic prostatectomies performed is estimated to exceed 60,000 driven by physician enthusiasm, patient interest and aggressive, effective marketing. The rapid adoption of this technique has been fueled by the promise of 3-D magnified visualization and wristed laparoscopic instruments offered by the robotic platform. Many surgeons have embraced these features, and are further motivated to learn this technique by patient demand and industry marketing.

Skeptics of the technique have appropriately submitted that the robotic approach needs to be shown to be a safe and effective procedure supported by evidenced-based outcomes which go beyond mere speculation, promise or marketing. To answer these concerns, there now appears to be convincing clinical evidence demonstrating that the outcomes of robotic prostatectomy may have indeed justified the hype and anticipated potential.

It has always remained crucial that the urological community critically assess this and any new treatment for prostate cancer for several important endpoints, including cancer control, perioperative complications, and short and long-term quality of life issues such as continence and potency. Although it is agreed that no procedure or surgeon fulfills every one of these goals all of the time, it is important to try to maximize these important outcome measures. At this point, there are several published case series and institutional experiences with robotic prostatectomy that address short and intermediate-term outcomes, which have helped validate much of the early promise of this new technology.

First and foremost, oncologic outcomes are the most important goal of surgical therapy. Every patient undergoing surgery hopes to be cured of cancer. Disease specific and overall survival remains the true measure of oncologic success for most tumor types including prostate cancer. However, the protracted natural history of prostate cancer makes these long-term end points a difficult metric to evaluate in the short term. Nevertheless a recent report on one of the most mature robotic case series has demonstrated 2-year and actuarial 5-year biochemical recurrence-free survival outcomes similar to expert open experiences. Moreover, positive surgical margin (PSM) rates have often been used as a surrogate measure of oncologic efficacy. To this end, robotic series have proved to be at least as effective with regard to cancer control as mature open series, with PSM rates ranging from 9.4% to 20.9% in robotic series. Interestingly, in a comparison between robotic and open prostatectomy by Smith et al robotic prostatectomy resulted in significantly lower PSM rates than the open approach (15% vs 35%), and these differences were preserved when stratified by pathological stage. While a variety of factors may have impacted such differences (eg pathological processing), the potential impact of surgical approach cannot be ignored.

The next issue to consider is perioperative morbidity and short-term outcomes. Decreased blood loss has consistently been noted with robotic prostatectomy compared to the open procedure. Comparisons between complication rates, using the systematic measures such as the Clavien system, have also demonstrated comparable results between robotic and open series (6.6% vs 10.3%). Furthermore, using prospective, validated quality of life instruments, patients undergoing robotic prostatectomy have demonstrated higher physical scores and a more rapid return to baseline than their counterparts treated with the open procedure, substantiating the observations of many that patients treated with robotic prostatectomy seem to recover more rapidly. Although short-term morbidity and convalescence are not overriding or exclusive measures of success, they are desirable goals for patients as long as cancer control and functional outcomes are not compromised.

Lastly, functional outcomes are important short-term and long-term goals for patients with prostate cancer, and many choose the mode of therapy based on their perceived potential urinary and sexual side effects. In robotic series there appears to be nothing inherently deficient compared to open surgery with
regard to the excisional or reconstructive aspects of this operation. Indeed, some have argued that the magnification, 3-D visualization, maneuverability and dexterity allow for more precision. The current robotic literature reveals continence outcomes that are at least as good as those reported in mature and expert open series, with 12-month continence rates of 84% to 97% vs. 79% to 93%, respectively.Interestingly, with the robotic approach immediate (20% to 27%) and 3-month (47% to 93%) continence rates have also been reported. Although there is little comparable data in the open literature, these findings suggest a rapid recovery with the robotic approach, and this more rapid return of continence has been our observation as well. Similarly, 12-month potency data are also favorable (70% to 80%) with the robotic approach and comparable to even longer term (24 months) data of expert open series (47% to 76%). Again 3-month potency outcomes (46% to 54%) seem to suggest the potential for a relatively rapid return of erectile function, although such open rates have not been reported.

In conclusion, the short-term and intermediate outcomes of robotic prostatectomy have demonstrated oncologic and functional results that are at least comparable to mature reports by expert open surgeons. These reports of robotic prostatectomy have come under great scrutiny, often using validated instruments for assessing functional success and quality of life outcomes, tools uncommonly used in prior reports of open series. With similar oncologic and functional outcomes, the potential benefits of decreased blood loss and more rapid convalescence may support and justify the widespread adoption and application of this procedure. We clearly recognize the importance of ongoing analysis, validation and long-term followup to continue to critically assess and define the role of robotics in the treatment of prostate cancer. However, a rapidly growing body of evidence is showing that the robotic approach measures up to the past and present standards for radical prostatectomy and, with certain benefits of decreased blood loss and lower morbidity, the robotic approach may soon represent a new surgical standard of care for the treatment of localized prostate cancer.

Raj S. Pruthi and Eric M. Wallen
Division of Urologic Surgery
The University of North Carolina at Chapel Hill
Chapel Hill, North Carolina

No Proof of Inferiority: Open Radical Retropubic Prostatectomy Remains State-of-the-Art Surgical Technique for Localized Prostate Cancer

Trends in the diagnosis of prostate cancer continue to favor low risk disease, and so the goals of cure, continence and potency are paramount. A 55-year-old man in excellent health with a strong family history of prostate carcinoma sought a second opinion for a diagnosis of clinical T2a localized prostate cancer, Gleason score 3 + 4 and prostate specific antigen of 3.4 ng/ml. He decided that surgery would be his best option and, as is common today, he searched the Internet which produced a robotic technique profile at a high volume center that touted a quicker return to normal activity, shorter hospitalization, reduced risk of incontinence and impotence, decreased blood loss, reduced pain and fever, fewer complications, less scarring and less risk of infections than traditional open surgery. It also mentioned that “wristed instrumentation, tremor filtration and 3-D magnification aid the surgeon in performing nerve-sparing for preservation of postoperative sexual function and continence.” However, nowhere on the web site was surgeon or site specific outcome data provided to support the aforementioned marketing statements. Therefore, why would a patient choose an open approach in the face of these claims?

As one who practices at a high volume radical retropubic prostatectomy (RRP) center at which...