Most Men With Clinically Important Localized Prostate Cancer Deserve First-Line Open or Robotic Radical Prostatectomy

As a high-volume radical prostatectomist and urologic oncologist who performs more than 100 prostatectomies each year, I emphatically believe that, overall, the modern-day radical prostatectomy yields better long-term quality-of-life outcomes than radiotherapy. That said, I am also very strongly in favor of multidisciplinary care for prostate cancer; before making an informed decision, all men with localized prostate cancer deserve to be seen by a surgeon and a radiation oncologist (and, ideally, by a medical oncologist if appropriate).[1] Surgery and radiotherapy form the backbone of active treatment for localized disease, and many patients need to pursue both treatment modalities in order to be rendered disease-free. It is critical for all prostate cancer specialists to have both of these options in their patient care toolbox.

Several caveats are worth considering:

• First, quality of life is in the eye of the beholder. That is, different patients may place different values on the top three areas of potential dissatisfaction with prostatic surgery—namely, the risks of impotency, incontinence, and lack of cancer control. Furthermore, the radiotherapy option is not...
without its own risks, since men need to consider the potential for side effects such as bowel and bladder problems.

- Second, quality-of-life outcomes are critically dependent on the skill and experience of the surgeon and team.

- Third, there are no randomized controlled trials (RCTs) comparing surgical management vs radiotherapy in men with localized prostate cancer, so all of the evidence is less than level 1, and the debate will continue no matter what Drs. Yu and Hamstra or I say.

- Finally, long-term quality of life also depends on the possible need for additional neoadjuvant, adjuvant, and downstream treatments. Thus, the quality-of-life impact of “pure” surgery or irradiation is less clear and perhaps less relevant for the majority of men in the post–prostate-specific antigen (PSA) testing era who have not undergone screening and present with higher-risk disease requiring multimodality therapy.

Despite the aforementioned limitations, no good surgeon would shy away from the prostatectomy vs radiotherapy debate, so here we go!

Quality of Life Is in the Eye of the Beholder

I don’t mean to boast here, but I have had extensive exposure to the treatment decision–making quandaries of men with localized prostate cancer. Yet, while I have performed more than 2,000 open radical retropubic prostatectomies over the last 30 years, I am still amazed at how easily some men arrive at a treatment decision and how painfully difficult it is for others. People are wired differently. Some men agonize over the decision between surgery and radiation, mainly due to the perceived higher risk of impotence and incontinence with surgery. However, modern open or robotic prostatectomy done by experienced surgeons (generally those with a lifetime experience of more than 500 surgeries, and a minimum of 40 to 75 cases per year) should result in a continence rate exceeding 90% in all men and exceeding 95% in healthy, non-obese men younger than 65 years of age. In younger, healthy men with normal sexual function preoperatively, rates of potency following prostatectomy performed with a bilateral nerve-sparing technique should be 80% to 90% or higher, compared with a potency rate of 50% in the overall population treated with this technique. Most studies have “counted” these procedures as successful regardless of the subsequent use of oral agents, such as sildenafil, to manage episodes of erectile dysfunction. With regard to cancer control, patients with organ-confined disease have a disease-free status greater than 90% at 10 years, whereas men with extracapsular extension and/or positive surgical margins have a 20% to 50% risk of recurrence; up to two-thirds of these men can be successfully treated with postoperative adjuvant radiotherapy or in the case of an early biochemical recurrence can receive salvage radiotherapy.[2] Patients contemplating surgery should be honestly apprised of these risks before making an informed decision.

One global way to evaluate quality-of-life outcomes following prostatectomy is to assess the levels of satisfaction and regret after treatment. A decade ago, in a study of 400 men who had undergone open
or robotic prostatectomy at Duke (between 2000 and 2007), we found that 84% were satisfied and 19% were regretful.[3] In that era, the field of robotics was new and it was our experience that men who underwent robotic-assisted laparoscopic prostatectomy (RALP) were less satisfied and more regretful, even in multivariable analysis. Not surprisingly, urinary, sexual, and bowel domain scores were predictive. African-American men had more dissatisfaction and regret, which was believed to be related to more distress from sexual dysfunction. We hypothesized that the men in our study perceived RALP to be minimally invasive. Furthermore, 10 to 20 years ago, surgeons thought that RALP would deliver better quality-of-life outcomes and likely indicated this to their patients. Since then, we have learned to counsel candidates for open surgery and robotic surgery based on more recent literature showing no material difference in outcomes between these two approaches based on technique alone. In fact, we now use the identical enhanced recovery after surgery (ERAS) protocol for both open and robotic prostatectomies.

The Skill and Experience of the Surgeon

One thing is clear as I reflect on my experience and learning curve with respect to radical prostatectomy: It is probably not appropriate to compare contemporary statistics on potency and continence postprostatectomy with data that are more than a decade old and data reported by surgeons in the early part of their careers. To my knowledge, Memorial Sloan Kettering Cancer Center was the first major cancer hospital to report outcomes based on the individual surgeon, finding substantial variation in continence rates.[4] This was a very novel approach at the time, but it is completely supported by common sense and Malcolm Gladwell’s “10,000-hour” rule in many areas of procedural expertise.[5] I suspect that the same caveat may be true of radiotherapy, particularly brachytherapy; however, I will leave this discussion to Drs. Yu and Hamstra.

The Lack of Level 1 Evidence

“Back in the day,” my predecessors at Duke did publish one of the only RCTs of surgery vs radiotherapy, in which they concluded that surgery provided superior cancer control.[6] The study was criticized but remained the only RCT in the prostate cancer surgery literature for many years. Recently, British investigators published a landmark RCT comparing outcomes with surgery vs radiotherapy vs active surveillance, showing no difference in cancer-specific survival at 10 years.[7,8] On the surface, this would indicate that the cancer control domain of quality of life is equal between surgery and radiotherapy for 10 years—but such a conclusion does not take into account the need for longer-term follow-up and the use of subsequent treatment in selected patients.

The Impact of Downstream Treatment

I have found that one of the best arguments when trying to educate patients about the benefits of treatment with surgery rather than radiation is the possible difference in outcomes related to the use of androgen deprivation therapy (ADT), particularly for most men at intermediate or high risk. I applaud the radiation oncology community for conducting outstanding RCTs showing a benefit from the addition of ADT to radiotherapy, but would point out that ADT is an Achilles’ heel in terms of quality of life.[9] Our group recently reported that over 60% of contemporary men who had a Gleason score of 8 on prostate biopsy were downgraded at the time of radical prostatectomy.[10] If all of these men at
clinical high risk had elected treatment with radiotherapy, they could have been subjected to 18 months or more of ADT. In my view, this represents a sampling error, and error in ascertainment of clinical risk is the biggest selling point of surgery—particularly for men who are characterized as high risk based on biopsy alone. Why not just perform surgery to better understand the true risk and avoid overtreatment with ADT? Even men with intermediate-risk disease who elect radiotherapy are prescribed 4 to 6 months of ADT. We should not underestimate the potential quality-of-life impact of even this “short course” of therapy and the myriad downstream side effects—when these men may not emerge from the castrate state for a year or more.

Summary

While I remain committed to a multidisciplinary approach for all men with localized prostate cancer, it is hard to argue against a modern open or robotic radical prostatectomy done by an experienced surgeon and team—that is, today’s radical prostatectomy is not your father’s surgery! It is a precise affair, sparing the bladder neck and the urethra below the prostate, while carefully preserving the neurovascular bundles. The high volumes of patients with localized prostate cancer diagnosed during the PSA era molded a generation of skilled surgeons who now deliver results that our forefathers in urologic oncology could only dream about. I applaud the skill and passion of our radiation oncology colleagues and partners, though I generally feel that most healthy men with clinically important disease deserve surgery first, with adjuvant or salvage radiation carefully delivered to the minority of men who need multimodality therapy. However, the majority can undergo a single strategic operation that will deliver the “trifecta”—preservation of sexual potency, urinary continence, and complete cancer control postprostatectomy.

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References:


