

Re: Comparative Effectiveness of Minimally Invasive vs Open Radical Prostatectomy

Hu JC, Gu X, Lipsitz SR, et al

JAMA 2009;302:1557–64

Expert's summary:

Hu et al compared postoperative 30-d complications, long-term incontinence and erectile dysfunction, and anastomotic stricture at 31–365 d postoperatively after minimally invasive radical prostatectomy (MIRP) or open retropubic radical prostatectomy (RRP) using US Surveillance, Epidemiology, and End Results–Medicare linked data.

The study included 1938 men who underwent MIRP and 6899 men who underwent RRP between 2002 and 2007 in several centers in the United States. Analyses showed that men undergoing MIRP versus RRP experienced shorter length of hospital stay; were less likely to receive heterologous blood transfusions; and were at lower risk of postoperative respiratory complications, miscellaneous surgical complications, and anastomotic strictures. In contrast, men undergoing MIRP versus RRP experienced more genitourinary complications and were more often diagnosed as having incontinence and erectile dysfunction, even after adjusting for differences in baseline rates of these conditions. However, no difference in rates of procedures to improve incontinence or erectile dysfunction was observed. Furthermore, the authors concluded that men undergoing MIRP versus RRP experienced similar postoperative use of additional cancer therapies.

Expert's comments:

Laparoscopic radical prostatectomy, either with or without robotic assistance, has become an accepted surgical approach for treatment of localized carcinoma of the prostate. It is based on the hypothesis that, when compared to RRP, these procedures minimize trauma to the periprostatic tissue and allow precise dissection along the prostatic capsule, providing improved functional outcomes for continence and potency while allowing complete surgical excision of all prostatic tissue. Therefore, many patients and physicians intuitively assume that minimally invasive techniques show reduced complications when compared with conventional open operations. This assumption is confirmed by this paper, which showed that among all men undergoing radical prostatectomy in the study, the use of MIRP increased almost 5-fold, from 9.2% in 2003 to 43.2% in 2006–2007.

We can conclude with the authors that MIRP reduces perioperative blood loss, postoperative hospital stay, and short-term complications in comparison to RRP because, in line with the current study, virtually all published reports have shown these reductions when comparing MIRP and RRP [1–3].

In these “words of wisdom,” the reported frequency of urinary incontinence and erectile dysfunction after MIRP and RRP are discussed in more detail. These reported frequencies are striking because they are remarkably higher compared to

the reported frequencies after most radical prostatectomy series from centers of excellence. These reports from centers of excellence all reported on one operative technique and showed similar rates for long-term continence (all >90%) and potency (40–67%) with MIRP or RRP [2–5]. Some suggested that MIRP is superior to RRP with respect to long-term functional postoperative outcomes.

The paper by Hu et al includes comparative data from multiple centers in the United States. Likely due to the study design, the observed results compare unfavorably to the reported postoperative functional outcomes after an RRP and an MIRP in the centers of excellence. It is possible that the observed difference in this study may be due to the learning curve and the relative increase in rates of MIRP versus RRP surgical techniques during the observation period. It is known that the learning curve for the MIRP approach is estimated to be at least 150 to 250 cases, with better outcomes for centers with greater surgeon volumes. Therefore, it is likely that MIRP is not superior to RRP in the return of urinary continence and erectile function during the learning curve and that, probably, the impact of a surgeon's skills and experiences may be more important than choosing between MIRP and RRP. Therefore, patients should be informed about the postoperative incidence of urinary incontinence and erectile dysfunction based on the data of individual surgeons and of multicentre studies, not only on the basis of data from centers of excellence. Furthermore, patients should be adequately informed about the benefits of MIRP versus RRP based on valid comparisons, like this study, and should realize that surgeon experience is important when choosing between specific procedures.

This study has some limitations, which were disclosed by the authors. One is that it is possible that men were more likely to be diagnosed as having urinary incontinence and erectile dysfunction following MIRP versus RRP due to observer bias. All study results were based on data from the hospital code system without the use of validated postoperative questionnaires. Therefore, a randomized controlled trial is indicated for comparing outcomes, using validated quality-of-life instruments, following MIRP and RRP. In the meantime, outcomes of valid comparisons, such as this study, will remain of importance to ensure that we are offering patients the optimal treatment and not the latest “marketing trend.”

Conflicts of interest: The authors have nothing to disclose.

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Re: Rethinking Screening for Breast Cancer and Prostate Cancer

Esserman L, Shieh Y, Thompson I

JAMA 2009;302:1685–92

Expert's summary:

In a provocative article stirring public debate, a distinguished urologist and a renowned breast surgeon question current wisdom behind screening for breast cancer and prostate cancer (PCa). Two decades of prostate-specific antigen (PSA) testing has increased the incidence of PCa and detected more early cancers but has failed to decrease the incidence of advanced cancers. The authors suggest that PSA screening is increasing the burden of low-risk cancers without significantly reducing the burden of aggressive cancers, and they argue that PSA has had a marginal effect on PCa mortality. Similar arguments apply to mammography and breast cancer.

Expert's comments:

Although PCa deaths have declined in the past two decades, the contribution from PSA testing is uncertain, and the solid concept that early detection and early treatment saves lives is under scrutiny. Randomized screening trials from the United States and Europe showed that PSA screening either did not reduce mortality [1] or, at best, prevented the death of 1 man for every 48 treated [2]. One explanation is that PSA screening detects nonlethal cancers but misses the most aggressive cancers. This approach fosters overtreatment and its undesired consequences in many men with indolent cancers, and early detection of lethal cancers may not be early enough for cure. The assumption that finding and treating early stage disease prevents late-stage or metastatic disease may not be correct.

Pertinent to the authors' analysis is an autopsy study by Liu et al [3], who suggest that a single precursor cell within the prostate (the "index lesion") is responsible for generating metastatic disease, whereas multiple other foci found in the prostate harbor indolent, or nonlethal, clones.

The implication of this work is that we can learn about metastases from genomic analysis of individual tumor foci within the prostate, perhaps before metastases occur. That suggestion alone justifies PSA testing and biopsy to permit molecular analysis, aiming to avoid blanket treatment of every PCa and to focus on treating that one malignant lesion destined to metastasize.

Although PSA screening detects more PCa, we are currently unable to distinguish those cancers that pose minimal risk from those that pose substantial risk. Here lies the crux of the authors' argument. Screening is most successful when premalignant and in situ lesions, or eventual lethal cancers, can be detected and eliminated, not by detecting slow-growing cancers that lack metastatic capacity. The authors recommend integrating a 4-fold shift in PCa screening: (1) to identify markers that differentiate significant cancers from insignificant cancers; (2) to reduce treatment for minimal-risk disease; (3) to develop clinical and patient decision tools to integrate current and emerging knowledge into routine care; and (4) to target prevention interventions in the highest risk patients. The road ahead presents many hazards, but at least the authors have articulated a roadmap to guide the way forward.

Conflicts of interest: The author has nothing to disclose.

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Re: Radical Prostatectomy Findings in Patients in Whom Active Surveillance of Prostate Cancer Fails

Duffield AS, Lee TK, Miyamoto H, Carter HB, Epstein JI

J Urol 2009;182:2274–8

Expert's summary:

The authors report on an analysis of 48 radical prostatectomy (RP) specimens obtained from patients with

low-risk prostate cancer (PCa) who were on active surveillance (AS) for a mean period of 2.5 yr but who had switched to surgery after disease progression was seen. Inclusion of the cohort for AS was based on the following characteristics: Gleason score ≤ 6 (no pattern 4/5), prostate-specific antigen density ≤ 0.15 , stage T1c, two or fewer positive biopsy cores, and $\leq 50\%$ single-core involvement [1]. The surveillance protocol consisted of yearly repeat biopsies. Progression was defined as finding Gleason