

Comparative Effectiveness of Minimally Invasive vs Open Radical Prostatectomy

Jim C. Hu, MD, MPH; Xiangmei Gu, MS; Stuart R. Lipsitz, ScD; Michael J. Barry, MD; Anthony V. D'Amico, MD, PhD; Aaron C. Weinberg, MD; Nancy L. Keating, MD, MPH

JAMA. 2009;302(14):1557-1564.

Context Minimally invasive radical prostatectomy (MIRP) has diffused rapidly despite limited data on outcomes and greater costs compared with open retropubic radical prostatectomy (RRP).

Objective To determine the comparative effectiveness of MIRP vs RRP.

Design, Setting, and Patients Population-based observational cohort study using US Surveillance, Epidemiology, and End Results Medicare linked data from 2003 through 2007. We identified men with prostate cancer who underwent MIRP (n = 1938) vs RRP (n = 6899).

Main Outcome Measures We compared postoperative 30-day complications, anastomotic stricture 31 to 365 days postoperatively, long-term incontinence and erectile dysfunction more than 18 months postoperatively, and postoperative use of additional cancer therapies, a surrogate for cancer control.

Results Among men undergoing prostatectomy, use of MIRP increased from 9.2% (95% confidence interval [CI], 8.1%-10.5%) in 2003 to 43.2% (95% CI, 39.6%-46.9%) in 2006-2007. Men undergoing MIRP vs RRP were more likely to be recorded as Asian (6.1% vs 3.2%), less likely to be recorded as black (6.2% vs 7.8%) or Hispanic (5.6% vs 7.9%), and more likely to live in areas with at least 90% high school graduation rates (50.2% vs 41.0%) and with median incomes of at least \$60 000 (35.8% vs 21.5%) (all $P < .001$). In propensity score-adjusted analyses, MIRP vs RRP was associated with shorter length of stay (median, 2.0 vs 3.0 days; $P < .001$) and lower rates of blood transfusions (2.7% vs 20.8%; $P < .001$), postoperative respiratory complications (4.3% vs 6.6%; $P = .004$), miscellaneous surgical complications (4.3% vs 5.6%; $P = .03$), and anastomotic stricture (5.8% vs 14.0%; $P < .001$). However, MIRP vs RRP was associated with an increased risk of genitourinary complications (4.7% vs 2.1%; $P = .001$) and diagnoses of incontinence (15.9 vs 12.2 per 100 person-years; $P = .02$) and erectile dysfunction (26.8 vs 19.2 per 100 person-years; $P = .009$). Rates of use of additional cancer therapies did not differ by surgical procedure (8.2 vs 6.9 per 100 person-years; $P = .35$).

Conclusion Men undergoing MIRP vs RRP experienced shorter length of stay, fewer respiratory and miscellaneous surgical complications and strictures, and similar postoperative use of additional cancer therapies but experienced more genitourinary complications, incontinence, and erectile dysfunction.

Author Affiliations: Division of Urologic Surgery (Drs Hu and Weinberg), Center for Surgery and Public Health (Drs Hu, Lipsitz, and Weinberg and Ms Gu), Department of Radiation Oncology (Dr D'Amico), and Division of General Internal Medicine (Dr Keating), Brigham and Women's Hospital, Lank Center for Genitourinary Oncology, Dana Farber Cancer Institute (Dr Hu), The Medical Practices Evaluation Center, Massachusetts General Hospital (Dr Barry), and Department of Health Care Policy, Harvard Medical School (Dr Keating), Boston.

 CiteULike  Connotea  Del.icio.us  Digg  Reddit  Technorati  Twitter [What's this?](#)