

Evolution of the clinical presentation of men undergoing radical prostatectomy for high-risk prostate cancer

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Study Type - Prognosis cohort series (multi-centre) **Level of Evidence** 4 **What's known on the subject?** and **What does the study add?** Men with high-risk prostate cancer experience recurrence, metastases and death at a higher rate in the prostate cancer population. This study adds greater than 20-year data regarding the continued evolution of high-risk prostate cancer toward high-Gleason disease as the sole determinant of high-risk status prior to radical prostatectomy. It validates the accumulation of multiple-risk factors as a poor prognostic indicator in a radical prostatectomy population and demonstrates long-term cancer specific outcomes, extending the findings demonstrated by previous publications.

Objective: To investigate the outcomes and potential effect of improved longitudinal screening in men presenting with high-risk (advanced clinical stage [$> T2b$], Gleason score 8-10 or prostate-specific antigen [PSA] level $> 20\text{ng/mL}$) prostate cancer (PC).

Patients and Methods: The Institutional Review Board approved, Institutional Radical Prostatectomy Database (1992-2010) was queried for men with high-risk PC based on D'Amico criteria. Year of surgery was divided into two cohorts: the Early PSA Era (EPE, 1992-2000) and the Contemporary PSA Era (CPE, 2001-2010). PC features and outcomes were evaluated using appropriate comparative tests.

Results: In total, 667 men had high-risk PC in the EPE and 764 in the CPE. In the EPE, 598 (89.7%) men presented with one high-risk feature; 173 (29.0%) men had a Gleason score of 8-10 on biopsy. In the CPE, 717 (93.9%) men presented with one high-risk feature ($P = 0.004$) and 494 (68.9%) men had a Gleason score of 8-10. At 10 years, biochemical-free survival (BFS) was 44.1% and 36.4% in the EPE and CPE, respectively ($P = 0.04$); metastases-free survival (MFS) was 77.1% and 85.1% ($P = 0.6$); and PC-specific survival (CSS) was 83.3% and 96.2% ($P = 0.5$). BFS, MFS and CSS were worse for men with more than one high-risk feature in both eras.

Conclusions: Over the PSA era, an increasing percentage of men with high-risk PC were categorized by a biopsy Gleason score of 8-10. The accumulation of multiple high-risk features increases the risk of biochemical recurrence, the development of metastases and death from PC. BFS, MFS and CSS are stable over the PSA era for these men. The balance between a greater proportion of men having high Gleason disease and a greater proportion with small, less advanced tumours may explain the stability in MFS and CSS over time.

Editorial Comment

High-risk prostate cancer includes advanced clinical stage ($> T2$), Gleason score 8-10 or PSA level $> 20\text{ng/mL}$. Men with high-risk prostate cancer experience recurrence, metastases and death at a higher rate in the prostate cancer population.

The study from Johns Hopkins, compared the frequency of Gleason score 8-10 on biopsy in two cohorts: the early PSA era from 1992 to 2000, and the contemporary era from 2001 to 2010. In the early era, 29.0% patients had a Gleason score of 8-10 on biopsy, and in the contemporary era 68.9%. In spite of this significant difference, considering all high-risks, at 10 years the biochemical-free survival, the metastases-free survival, and prostate cancer-specific survival were stable comparing the two eras.

The authors conclude that the balance between a greater proportion of men having high Gleason disease and a greater proportion with small, less advanced tumours may explain the stability in survival.

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RECONSTRUCTIVE UROLOGY

Low yield of early postoperative imaging after anastomotic urethroplasty

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Objectives: To evaluate the necessity and clinical effect of posturethroplasty imaging.

Methods: We reviewed our database of all urethroplasties performed by a single surgeon at our referral center during a 2-year period. The patients underwent voiding cystourethrography at a mean of 24 days postoperatively. The data analyzed included patient history and demographics, operative details, imaging results, and clinical outcomes.

Results: From 2007 to 2009, 210 patients underwent urethral reconstruction at our center. The patients undergoing meatoplasty or staged repairs were excluded, leaving 156 patients with postoperative imaging studies for analysis. Of 110 anterior urethroplasties, 59 (54%) consisted of excision and primary anastomosis, 28 (25%) an augmented anastomotic procedure, and 23 (21%) a pure ventral onlay with a flap or graft. All 46 posterior urethroplasties were performed with scar excision and primary anastomosis. Of the 156 patients, only 4 (3%) had extravasation on postoperative voiding cystourethrography (2 after posterior urethroplasty, 1 after augmented anastomosis, and 1 after ventral onlay)--all were successfully managed with catheter replacement and removal at a mean of 8 days afterward. None of the 59 men undergoing excision and primary anastomosis demonstrated extravasation.

Conclusions: Extravasation on posturethroplasty voiding cystourethrography is rare after approximately 3 weeks of catheter drainage. Imaging can be omitted after uncomplicated excision and primary anastomosis urethroplasty.

Editorial Comment

Urethral imaging after urethroplasty is performed in order to rule out extravasation. If extravasation is seen then the catheter is replaced in order to divert the urine until the extravasation is healed. Such imaging is commonly done as either a peri-catheter retrograde urethrogram or a voiding cystourethrogram after catheter removal. The authors demonstrate that when removing the catheter at a mean of 3.5 weeks after surgery, the incidence of extravasation is extremely low. Furthermore, in anastomotic urethroplasties there were no instances of extravasation. The suture line is shorter in anastomotic urethroplasties so it is intuitive that these would have a lower risk of prolonged extravasation.