

Abstract

BACKGROUND: The patterns of recurrence of patients with node-positive prostate cancer (PCa) at radical prostatectomy (RP) are still unknown.

OBJECTIVE: To describe recurrence patterns, to identify predictors of progression, and to test the impact of the site of clinical recurrence (CR) on cancer-specific mortality (CSM).

DESIGN, SETTING, AND PARTICIPANTS: We included 1003 patients with node-positive PCa treated with RP and extended pelvic lymph node dissection. Patients who experienced biochemical recurrence (BCR; n=370) and CR (n=183) were identified. CR was defined as positive imaging after BCR. Patients were stratified according to the first site of CR: local and/or nodal (recurrence in the prostatic bed and/or pelvic nodes), retroperitoneal, bony, or visceral.

OUTCOME MEASUREMENTS AND STATISTICAL ANALYSIS: Multivariable competing-risks regression analyses identified predictors of systemic recurrence (ie, retroperitoneal, bony, and/or visceral) and tested the association between the site of recurrence and CSM after accounting for the risk of other-cause mortality.

RESULTS AND LIMITATIONS: When considering patients experiencing BCR, pathologic Gleason score, time to BCR, and the administration of a positron emission tomography/computed tomography scan represented predictors of systemic recurrence (all p ≤ 0.002). Among patients who experienced CR, recurrence was local and/or nodal in 56 (30.5%), retroperitoneal in 25 (13.7%), skeletal in 77 (42.1%), and visceral in 25 (13.7%). Among patients experiencing local recurrence, 27 (48.2%) had positive margins, 29 (51.8%) had adjuvant radiotherapy, and 22 (39.5%) had salvage radiotherapy. Patients experiencing local and/or nodal recurrence had higher 5-yr CSM-free survival rates compared with those with retroperitoneal, bony, and visceral recurrence (79.3%, 76.3%, 50.8%, and 35.3%, respectively; p<0.001). The site of recurrence represented an independent predictor of CSM (p ≤ 0.04).

CONCLUSIONS: In approximately one-third of patients who are pN+ and experience CR, the prostatic bed and pelvic lymph nodes represent the first sites of recurrence. These patients have a more favorable prognosis compared with those with skeletal and visceral metastases. These data have important implications for the selection of the optimal postoperative management of pN+ patients who experience CR. Although patients with local and/or pelvic nodal recurrence might benefit from nonsystemic salvage therapies, men with visceral and skeletal recurrence might represent ideal candidates for systemic approaches.

PATIENT SUMMARY: Not all patients with pN+ prostate cancer who experience clinical recurrence harbor distant metastatic disease. Local and/or nodal recurrence occurs in one-third of these cases.
These patients share a more favorable prognosis than their counterparts with systemic recurrence. These results are important for tailoring the optimal postoperative management for each node-positive patient with recurrent disease after surgery.

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**KEYWORDS:** Cancer-specific mortality; Clinical recurrence; Distant metastases; Lymph node dissection; Lymph node metastases; Prostate cancer

PMID: 25959166 [PubMed - as supplied by publisher]

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