Metastatic Prostate Cancer from Bladder Cancer; A Mimic of Primary Prostate Cancer

Jinxing Yu, MD
Professor of Radiology & Surgery
Director of Prostate Imaging & Intervention
Virginia Commonwealth University
Richmond
• 69-year-old male presenting with hematuria and found to have a bladder mass
• CT of abdomen and pelvis shows an enlarged prostate with heterogeneous enhancement
• PSA 0.8. No prior TRUS bx. Prostate MRI performed

Fig. A-B) Coronal T2 and axial post contrast images demonstrated a large mass in the bladder with enhancement (arrow) consistent with urothelial carcinoma.
Fig. C-E) Axial T2, ADC and DCE showed a large T2 hypointensity in the left prostate involving the peripheral zone and transitional zone, with diffusion restriction and abnormal early enhancement (arrows), concerning for primary prostate cancer (PI-RADS 5).

US/MRI fusion prostate biopsy confirmed high grade urothelial carcinoma with extensive cancerization of prostate ducts; stroma intact. Bladder mass biopsy demonstrated invasive, high-grade urothelial carcinoma. The patient underwent cystoprostatectomy with ileal conduit.
Teaching Points

• Involvement of the prostate by TCC is a common finding in radical cystoprostatectomy for bladder cancer, 12% to 58%

• Transitional cell carcinoma of the prostate may arise from extension of bladder tumors, proximal prostate ducts/urethra, or from cell implantation from vesical neoplasms

• MRI imaging features are similar to that of prostate cancer

• Key points which will help in the differential diagnosis
  - Presence of bladder cancer
  - Low PSA
  - Even large prostate tumor, the capsule of prostate is not affected in our case (no bulging, no ECE)
    - Because the tumor cells are within the ducts; no stroma invasion
References


