Prostatic Stromal Tumors of Uncertain Malignant Potential

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We present a 53-year-old man with a multilocular solid and cystic mass measuring 19 cm on cross-sectional imaging. After undergoing pelvic mass excision, final histopathology confirmed the diagnosis of primary prostatic stromal tumor of uncertain malignant potential (STUMP). Prostatic STUMPs are rare mesenchymal tumors with diverse histologic patterns. They are distinct from prostatic stromal sarcomas as they do not behave aggressively, although some may occasionally demonstrate local recurrence after resection. Due to their unpredictable malignant potential, lack of correlation between histologic patterns, and sarcomatous differentiation, these patients warrant surgical excision and close follow-up. UROLOGY 132: e3–e4, 2019. © 2019 Elsevier Inc.

A 53-year-old male presents with a 7-year history of recurrent lower urinary tract symptoms and urinary retention. Cross sectional imaging demonstrated a 12 × 17 × 19 cm multilocular solid and cystic mass replacing the prostate gland (Fig. 1). Serum prostate-specific antigen was 1.8 ng/mL and transrectal ultrasound-guided prostate biopsy suggested low-grade mesenchymal spindle cell neoplasia (Fig. 2). Following bladder-sparing, robotic-assisted laparoscopic radical prostatectomy with resection of pelvic mass, gross pathologic specimen revealed a well-circumscribed, 14 × 14 × 6 cm solid mass with multilocular cavities. Further sectioning demonstrated a multicystic cut surface (Fig. 3). Final histopathology revealed a diagnosis of primary prostatic stromal tumor of uncertain malignant potential (STUMP), with no evidence of lymph node involvement or tumor invasion to surrounding structures. The patient will be followed with cross sectional imaging every 3-6 months for 2 years, then less often thereafter.

Primary prostatic stromal tumors are rare, distinct mesenchymal tumors with diverse histologic patterns.[1] In

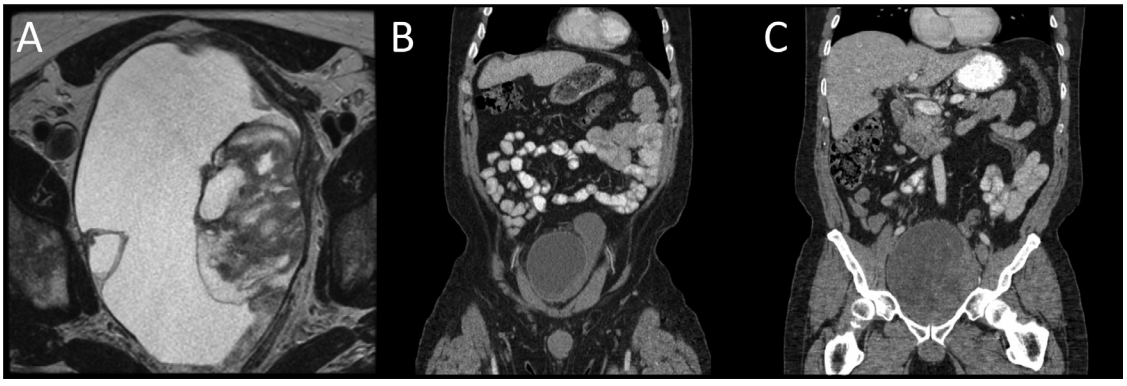

Figure 1. (A) Axial image of a pelvic MRI revealed a large cystic hemorrhagic mass (16.6 × 11.9 cm) replacing the prostate gland with a large mural nodule (9.7 × 5.8 cm) demonstrating avid enhancement. (B and C) Coronal images on a noncontrast CT demonstrated a large cystic mass with solid components along the inferolateral portions of the cyst with resultant compression and left-sided deviation of the urinary bladder.

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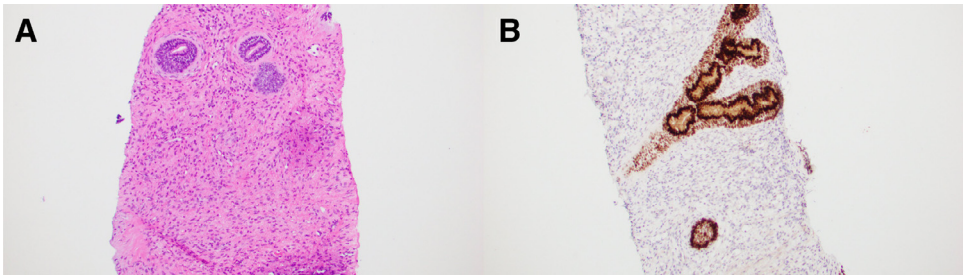

Figure 2. (A) Biopsy material showing hypercellular stroma composed of bland spindle cells with an admixed bland glandular component (hematoxylin and eosin stain, 100× magnification). (B) Immunohistochemical staining for NKX 3.1 is positive in the glandular component on biopsy specimen (NKX 3.1 immunohistochemical stain, 100× magnification). The biopsy specimen was also focally positive for desmin, SMA and CD34 within the spindle cell lesions.

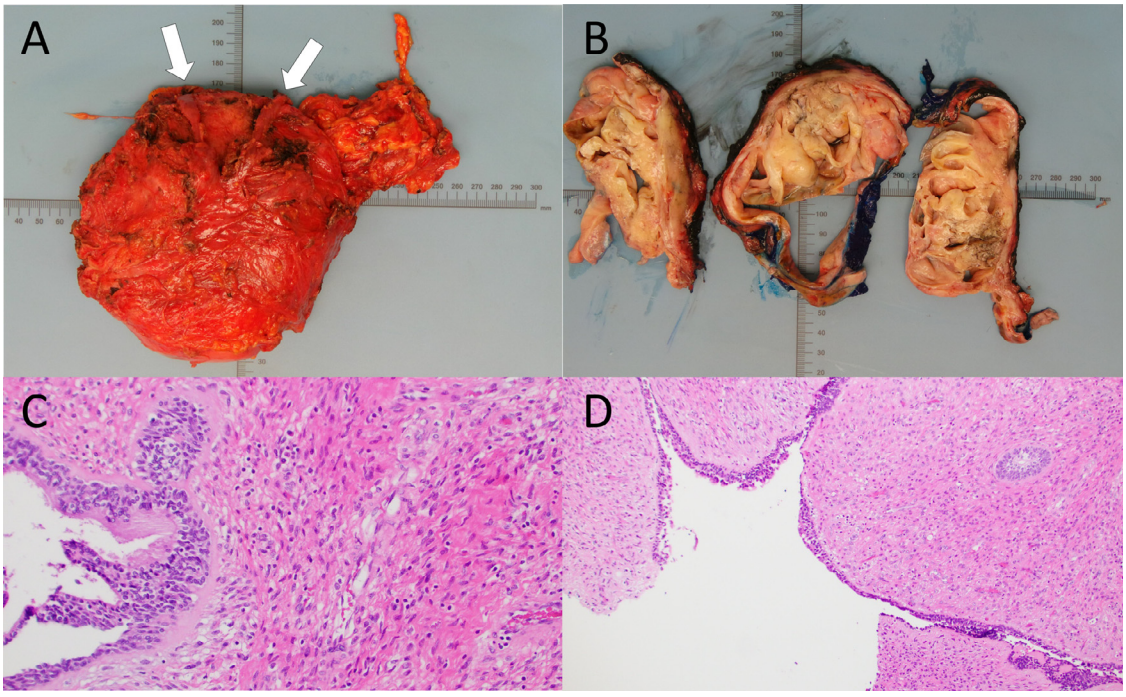

Figure 3. (A) Gross pathology specimen revealed a 14 × 13.5 × 5.5 cm, well circumscribed, solid and cystic mass replacing the entire prostate gland, seminal vesicles and vas deferens (arrows) with an attached fragment of fibroadipose tissue. (B) Serial sectioning reveals tan-white lobular cut surfaces with multiple cystic areas filled with yellow serous fluid. The cyst wall lining is smooth to focally nodular. (C) Resection material showing hypercellular stroma with no significant nuclear atypia or mitotic activity (hematoxylin and eosin stain, 200× magnification). (D) Multiple areas with phyllodes-like pattern including broad leaf-like architecture covered by bland epithelium (hematoxylin and eosin stain, 100× magnification).

contrast to prostatic stromal sarcomas, STUMPs do not behave aggressively, although some may demonstrate local recurrence after resection.[2] With a mean occurring age of 54 years and peak incidence in the 6th and 7th decades, STUMPs usually exhibit an indolent course, but are recognized as neoplasms with unique local morbidity and malignant potential.[3] Due to their unpredictability, lack of correlation between histologic patterns, and sarcomatous differentiation, these patients warrant surgical excision and close follow-up.[1,4]

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