

Leiomyoma of the Prostate: Case Report and Review of the Literature

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Abstract

Leiomyomas can develop in any organ containing smooth muscles. They most commonly occur in the gastrointestinal and the female genital tracts. Leiomyoma of the prostate is a rare, benign tumor. We report 3 cases of rare prostatic leiomyomas. The paucity of literature describing prostatic leiomyoma increases the chance for misdiagnosis. Fewer than 30 cases in the English literature, with none including magnetic resonance imaging, computed tomography (CT), ultrasound, positron emission tomography-CT, and pathological findings together were found. Over the past decade, there has been a shift in the management of prostatic leiomyomas. Prostatectomy was once considered a standard approach for treatment, but now nonsurgical treatment options such as embolization are preferred. Conservative management including surveillance is an option for asymptomatic patients.

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Introduction

Leiomyoma is a benign tumor arising from smooth muscle fibers. Prostatic leiomyomas are extremely rare.¹ Radiologists and surgeons should be aware of this entity because of its benign nature and a misdiagnosis of prostate cancer puts the patient at risk for unnecessary treatment. Historically, prostatectomy was considered standard management for prostatic leiomyomas, but newer treatment options such as embolization have proven beneficial.

Cases

Case 1

A 56-year-old man presented to an outside hospital with urinary frequency, significant nocturia (5-6 times a night), dysuria, and difficulty voiding after intercourse. The patient was prescribed tamsulosin. An enlarged prostate with no other abnormalities was noted on cystoscopy. In 2014, his serum prostate-specific antigen (PSA) level was 3.7 ng/mL and rose to 4.1 ng/mL in 2015; this increase and findings of an enlarged prostate on digital rectal exam led to a prostate biopsy.

Computed tomography (CT) and magnetic resonance imaging (MRI) showed a 13-cm mass arising from the left lobe of the prostate, displacing the rectosigmoid colon to the right, with mass effect on the urinary bladder (Figures 1 and 2). The patient was referred to our institution for further care. On positron emission tomography (PET)-CT, the mass had mild fluorodeoxyglucose (FDG) uptake.

Pathology showed bland spindle cell proliferation with minimal cytologic atypia. No glandular component was identified (Figure 3). Immunohistochemical staining was positive for desmin, smooth muscle actin (SMA), S100, CD34 (patchy), and progesterone receptor (50%), and negative for CD117 and pancytokeratin. The Ki-67 proliferation index was low (< 5%). These findings confirmed the diagnosis of leiomyoma and a digital subtraction angiography (DSA) embolization was planned. On DSA, the left internal iliac artery was the predominant blood supply to the tumor, and was subsequently embolized until stasis. Repeat DSA confirmed no significant flow to the mass from the embolized vessels. Follow up CT after 2 to 4 months showed a decrease in size of the midline pelvic leiomyoma and the patient is receiving continued surveillance (Figure 4).

Case 2

A 64-year-old man presented with a year of obstructive lower urinary tract symptoms, including difficulty initiating urination and 1 episode of urinary retention requiring a Foley catheter and was receiving tamsulosin and finasteride. His PSA level was within normal limits. A CT scan for abdominal pain at an outside hospital

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Figure 1 Case 1. Prostatic Leiomyoma. Contrast-Enhanced Computed Tomography (CT) Image of the Pelvis. Axial (A), Coronal (B), and Sagittal (C) and Axial Fused Positron Emission Tomography-CT (D) Images Show a Heterogeneous Pelvic Mass With Mild Metabolic Activity

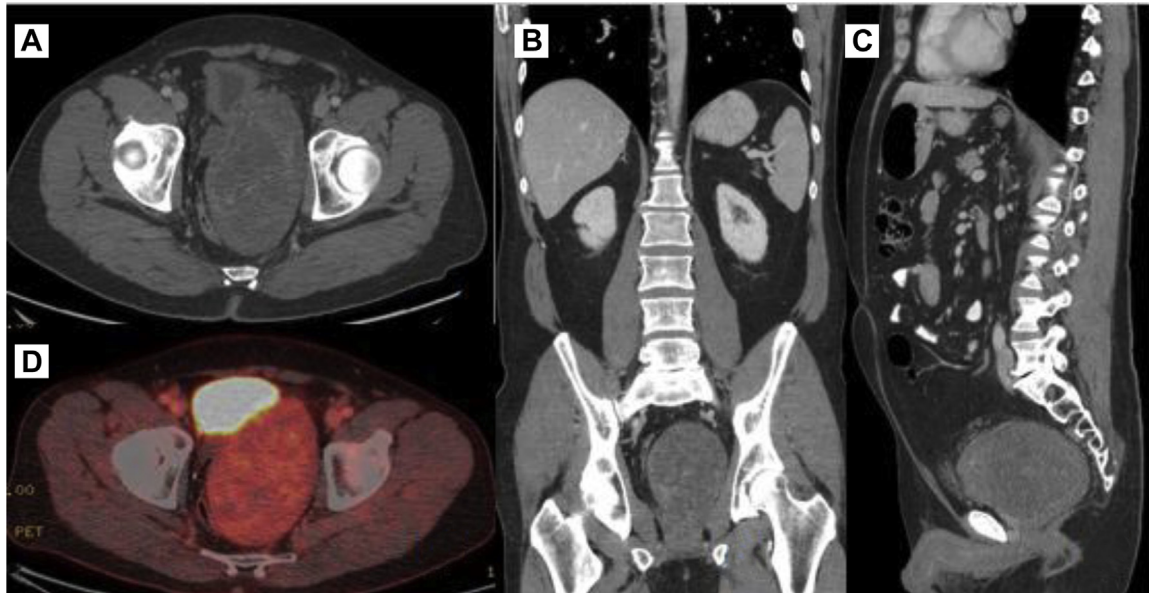
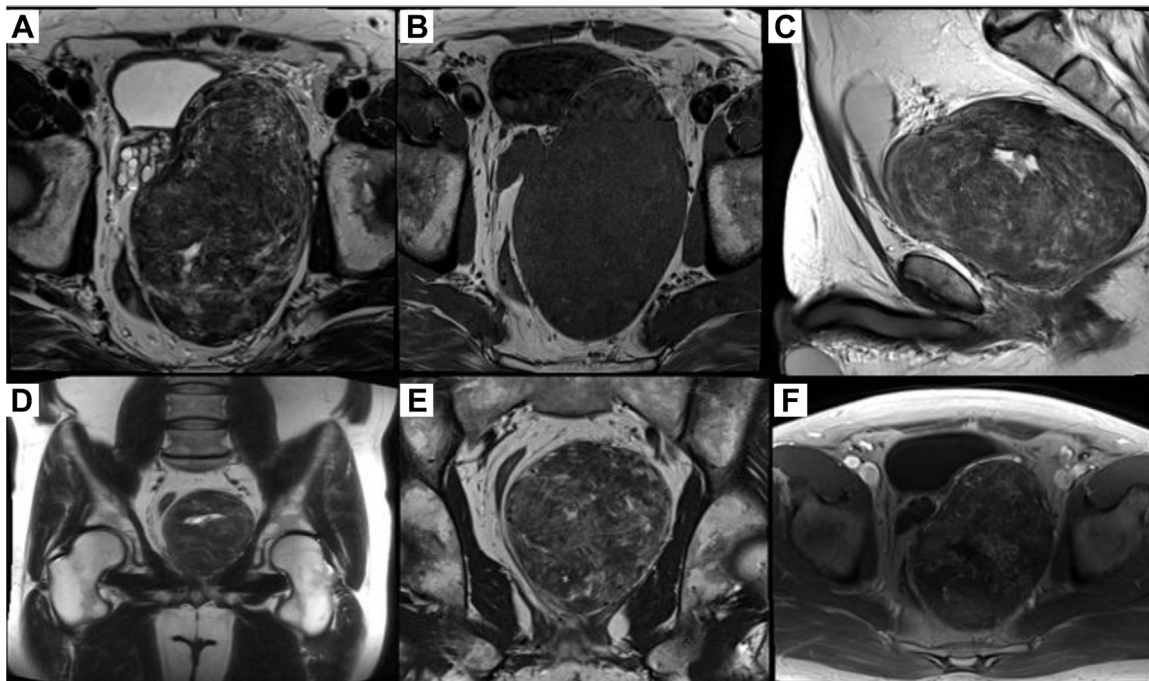


Figure 2 Case 1. Prostatic Leiomyoma. Magnetic Resonance Imaging of the Pelvis. T2-Weighted Axial (A), Sagittal (C), and Coronal (D and E) Images Reveal a Pelvic Mass With Heterogeneous Enhancement With Gadolinium Contrast on T1-Weighted Images (F). The Mass is Isointense to the Muscle on T1-Weighted Images (B)



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