

True leiomyoma of prostate

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Introduction

Leiomyoma of prostate occurs in two patterns. The most common presentation is leiomyomatosis associated with benign adenomatous hyperplasia with multiple small nodules. True leiomyoma of the prostate, which is devoid of glandular portion, is another type that is extremely rare [1]. Histopathological examination is the only method by which differentiation between leiomyoma and leiomyosarcoma can be done [2].

We report a case of true prostatic leiomyoma associated with favourable outcome after complete removal [3].

Case presentation

A 68-year-old male presented to casualty with acute urinary retention for which patient was catheterized. Patient had history of chronic retention of urine associated with occasional haematuria. Patient had no associated medical history. Physical examination was normal. On digital rectal exam, a uniformly enlarged prostate gland with smooth surface and elastic consistency noted.

Blood assessment was also normal. Serum PSA was 7.4. Urinalysis revealed E. coli with no other abnormality. USG showed gross prostatomegaly with volume 175 cc and median lobe projecting into urinary bladder. Oval mass arising from postero-inferior region of bladder with size 8 cm & uniformly dense relative to muscle was seen on CT abdomen.

Prostate biopsy was suggestive of benign spindle cell proliferation of prostatic stroma. Patient then underwent open radical prostatectomy. On gross inspection the growth was well confined but devoid of capsule and was nodular in consistency. Cut surface showed a solid, firm, grey white mass with whorled appearance. Microscopy section shows a tumour arranged in fascicles and bundles. Individual cells are elongated, spindle-shaped with hyperchromatic nuclei,

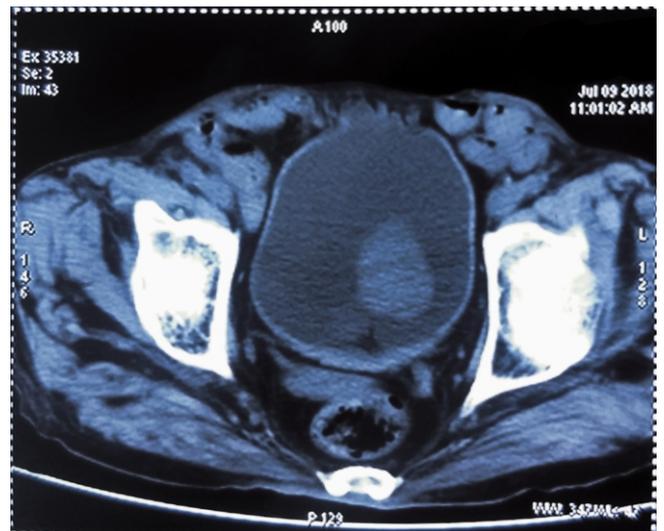


Figure 1. CT abdomen and pelvis showed an 8 cm size, confined oval growth arising postero-inferiorly to bladder

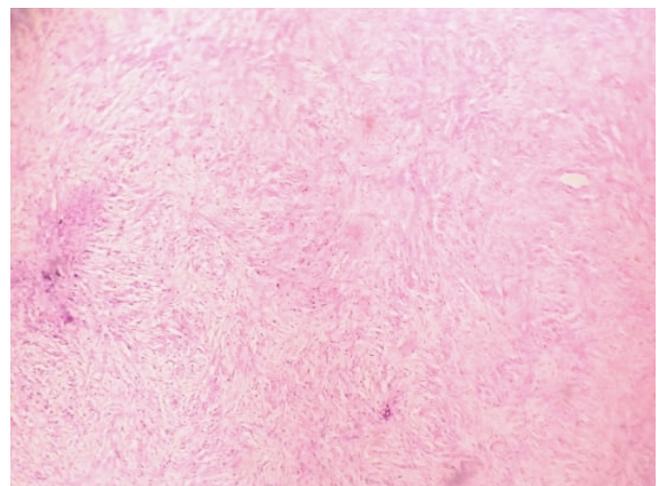


Figure 2. HE staining 10 x spindle-shaped cells arranged in fascicles and bundles. Individual cells are elongated, abundant eosinophilic cytoplasm and absence of normal prostatic glands.

abundant eosinophilic cytoplasm and inconspicuous nucleoli with absence of normal prostatic glands.

A diagnosis of true prostatic leiomyoma was made, confirmed on immunohistochemistry. Post-operative period was uneventful, urinary catheter removed on post-operative day 8. After 12 month of follow-up patient is asymptomatic.

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Discussion

Leiomyoma can arise from any organ containing smooth muscles but mostly arise from gastrointestinal and female genital source. It can also be seen in the genitourinary system but is rare [1].

Lebec first reported leiomyoma of prostate in 1876. Following which 64 cases have been reported world-wide [5]. Various theories had been proposed but none firmly established the pathogenesis of prostatic leiomyoma. Most probable cause may be from repeated infections and inflammation, leading to transformation of glandular tissue to smooth muscle [3].

Size and location of leiomyoma determines variety of symptom. Patients presents with complaints similar to benign adenomatous hyperplasia such as acute urinary retention associated with lower urinary tract symptoms and few reported macroscopic hematuria [3, 4, 6].

Ultrasound shows congruent mass with a typical whorled appearance and smooth wall [2]. Computed tomography demonstrate a well circumscribed nodules or mass in the pelvis arising from the prostate with intra-vesical protrusion or compression of the bladder [3]. On MRI, T1-weighted images display intermediate signal strength, while T2-weighted images show medium to intermediate signal intensity which is similar to muscle. Extension of mass and its infiltration into surrounding tissues can also be seen [2].

Spindle shaped smooth muscle cells with ample cytoplasm, combined with absence of nuclear atypia or mitosis on microscopy differentiate leiomyoma with leiomyosarcoma [2, 3]. Atypical nuclei and high mitotic activity indicate malignant pathology which can be ruled out on histological examination [3, 6].

On immunohistochemistry, leiomyoma is positive for myogenic marker such as desmin and smooth muscle actin. Leiomyoma's are negative for c-kit (CD 117) and should be differentiated from GIST (Gastro intestinal stromal tumour) [7]. Complete resection of the tumour is preferred as there is risk for malignant change, particularly when atypical cells are found [2, 3, 5]. Being a benign lesion, complete resection of

leiomyoma is associated with excellent prognosis and very low recurrence rate [2, 4, 6].

Conclusion

True prostatic leiomyoma is a rare, benign lesion which resembles benign hypertrophy of prostate but devoid of glandular tissue. Confirmatory diagnosis can be made with histological examination. Complete removal of tumour benefits with symptom free survival and very low recurrence rate.

All authors disclose no conflict of interest. The study was conducted in accordance with the ethical standards of the relevant institutional or national ethics committee and the Helsinki Declaration of 1975, as revised in 2000.

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Learning Points:

- A very rare disorder involving prostate which presents with symptoms similar to benign enlargement of prostate.
- Must be differentiated with leiomyosarcoma using biopsy.
- Complete resection is associated with excellent prognosis.