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A RARE PROSTATIC TUMOUR MIMICKING URINARY BLADDER CARCINOMA: A DIAGNOSTIC CHALLENGE

Urology

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ABSTRACT

Sarcoma of the prostate is a rare malignancy accounting for less than 0.1% of all primary prostatic neoplasms, leiomyosarcoma being the most common type. They present with non specific symptoms making the diagnosis challenging. Here we discuss the case of a 55 year old male patient who came with complaints of total painless hematuria and intermittency of urine and was suspected to have a urinary bladder tumour. However further imaging and histopathological analysis revealed a prostatic leiomyosarcoma which was vimentin and SMA positive. He was planned for chemoradiotherapy.

KEYWORDS

INTRODUCTION:

Leiomyosarcoma of the prostate first described by Riba and colleagues in 1950 [1], till date remains one of the rarest prostatic malignancies posing challenges to diagnosis and management. They have an aggressive clinical course and present with non-specific symptoms making early diagnosis a rare possibility and may often be misdiagnosed as BPH[2]. They are more commonly high-grade tumours exhibiting necrosis and cystic degeneration[3]. There are no established guidelines for treatment, however a multidisciplinary approach would be essential for its management.

Case Report:

A 55-year-old male patient presented to the urology OPD with complaints of total painless haematuria since 1 month. there was no history of passage of clots. He also had complaints of thin stream of urine and intermittency since 2 months. There was no history of fever, burning micturition or dysuria. He was a known case of systemic hypertension on oral Amlodipine.

He was evaluated with a pelvic ultrasound examination which showed a heterogeneously hyperechoic mass arising from the left lateral border of urinary bladder, with distended bladder and low-level internal echoes within the urinary bladder. Urine cytology was negative for malignant cells and serum PSA was normal. Uroflowmetry was done which showed an average flow of 24.5ml/s, with a maximum flow of 38.3 ml/s and total volume of 280 ml.

A CECT abdomen and pelvis was done which showed a heterogeneously enhancing, well-defined, irregular, polypoidal, endophytic lesion measuring about 4.2 cm x 4.7 cm arising from the posterior and inferior wall of the urinary bladder, with a peripheral rim of calcification. There was mild peri vesical fat stranding. The mass lesion showed ill-defined fat planes with the superior aspect of the prostate, however, the fat planes with bilateral seminal vesicles was maintained. Left iliac sub-centimetric enhancing lymph nodes were present. The prostate measured 4.5 x 4.5 x 4 cu cm, with a volume of 40 cc (Grade II prostatomegaly). Few paraaortic and aortocaval lymph nodes were enlarged.

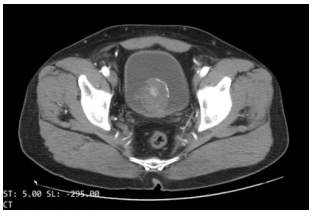

Figure *1* CT image showing extension of growth into the urinary bladder

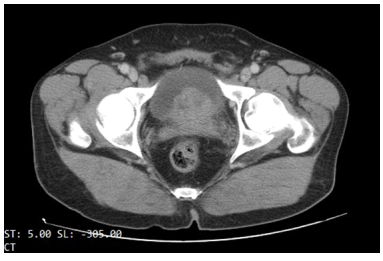

Figure *2* CT image showing the prostatic growth

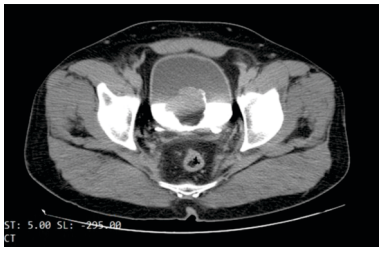

Figure *3* CT image with contrast showing irregular growth in the urinary bladder

Patient underwent diagnostic cystoscopy under spinal anaesthesia. Intraoperatively a large 4 X 4 cm endophytic solid lesion was noted arising from right lobe of prostate entering the bladder. Posterior wall and trigone of urinary bladder was oedematous with grade II trabeculations in the urinary bladder. The prostatic growth was resected, and biopsy was taken from the urinary bladder mucosa and sent for histopathology and IHC.

Histopathology showed features suggestive of undifferentiated pleomorphic sarcoma – likely leiomyosarcoma of prostatic origin. IHC was suggestive of high grade leiomyosarcoma of prostate which was vimentin and SMA positive.

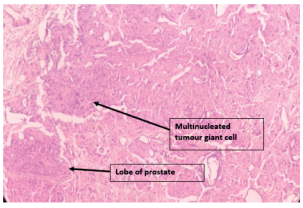

Figure *4* Leiomyosarcoma as seen under low power resolution

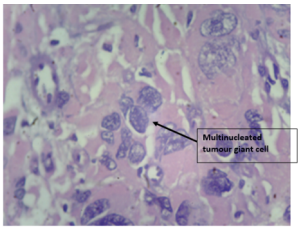

Figure *5* Leiomyosarcoma as seen under high power resolution

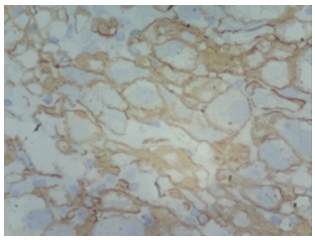

Figure *6* Immunohistochemistry showing SMA positive

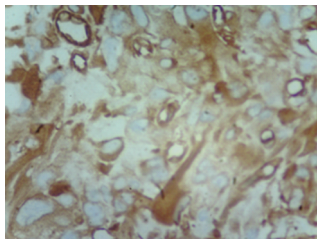

Figure *7* Immunohistochemistry showing Vimentin positive

After discussion in the tumor board, patient was planned for chemoradiotherapy. However, patient was lost to follow-up.

DISCUSSION:

Prostatic sarcomas are extremely rare neoplasms that constitute less than 0.1% of primary malignancies of the prostate [4]. The types of prostatic sarcomas are leiomyosarcoma, rhabdomyosarcoma, fibrosarcoma, and spindle cell sarcoma [1]. Of these, leiomyosarcoma is the commonest and accounts for about 38-52% of primary sarcomas of the prostate [5]. They are mesenchymal in origin and have an indolent clinical course.

They present with bladder outlet obstruction in 4th to 7th decade of life [3]. They may also infrequently present with perineal pain, haematuria, burning on ejaculation, constipation and weight loss. Nearly one third of the patients present with metastasis to lung and liver [5,6]. Digital rectal examination will reveal a nonspecific enlargement of the prostate. Tumour size may vary from 3 – 21 cm, with invasion of local structures [7]. The serum level of prostate specific antigen is within normal limits owing to their non-epithelial origin and may wrongly direct towards the assumption of a benign pathology [8].

The diagnosis is established by transurethral resection of prostate or occasionally by ultrasound guided transrectal needle biopsy. Histopathological evaluation of these lesions reveals high grade hypercellular lesions which are composed of intersecting bundles of eosinophilic spindle shaped cells which have increased mitotic activity and nuclear atypia. High grade leiomyosarcomas exhibit necrosis and cystic degeneration. Low grade leiomyosarcomas which are rare, show moderate atypia, scattered mitoses, and focally invasive pattern around benign prostatic glands [3]. These are vimentin, smooth muscle actin and desmin positive. Few may express cytokeratin and progesterone receptor as well. Cytogenetic analysis shows clonal chromosomal rearrangements in chromosomes 2, 3, 9, 11 and 19 [9].

Imaging helps in assessing the size and extent of the lesion. USG may reveal enlarged prostate with urinary bladder wall thickening with trabeculation and sacculation. TRUS may reveal heterogenous hypoechoic lesions with capsular invasion or extension to adjacent structures [10]. Clinical staging is augmented by cross-sectional pelvic imaging using CT or MRI. The metastatic evaluation includes a CT thorax as lung is the most common site of metastasis. Leiomyosarcomas of the prostate are found to be FDG avid on PET scan, and SUV_{max} is a likely predictor of tumour size and grade [8].

There are no established guidelines for management of prostatic leiomyosarcoma. A multimodal approach comprising of surgery, chemotherapy and radiotherapy would be required with surgery being the mainstay of treatment in surgically resectable tumours. Surgeries performed are radical retropubic prostatectomy, radical cystoprostatectomy, suprapubic prostatectomy and pelvic exenteration. Chemotherapy regimens used include anthracyclines, alkylating agents and vinca alkaloids [8].

It has poor long-term prognosis due to its aggressive nature and high chance of disease recurrence and metastasis. Median survival is about 17 months with poor overall survival [1].

CONCLUSION:

Leiomyosarcoma is a rare and notorious tumour of the prostate with an aggressive course and poor prognosis. A high index of suspicion and thorough evaluation are essential for its diagnosis and a multimodal approach helps in its management.

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