**Not What It Seemed: The Hidden Mass Behind the Bladder Illusion Huge Prostatic Sarcoma**

**ABSTRACT:**

**Aim**: To report an extremely rare case of huge prostatic sarcoma, to best of our knowledge it is the largest to be reported in India.

**Presentation of case**: Prostate sarcoma is extremely rare, comprising <0.1 % of prostate cancers. A 51-year male presented with acute urinary retention. Imaging following decompression revealed a massive prostatic tumour measuring ~1130 cm³, with evidence of bilateral ureteric obstruction, local invasion into the rectal mesocolon & lateral pelvic wall. TransRectal Ultrasound (TRUS) biopsy suggested Prostatic Sarcoma. Anterior pelvic exenteration with ileal conduit with end colostomy was planned; however, the patient succumbed to cardiopulmonary arrest, likely precipitated by underlying comorbidities including coronary artery disease and COPD.

**Discussion and Conclusion**: This case highlights the potential severity of advanced prostatic tumours and the critical impact of systemic comorbidities on treatment outcomes.

***Keywords:***

*Prostatic Sarcoma, Giant Prostate, Giant Prostatic Sarcoma,* *Bladder Illusion*

1. **INTRODUCTION:**

Prostatic malignancies are overwhelmingly dominated by adenocarcinomas, accounting for more than 95% of cases. In contrast, prostatic sarcomas are extremely rare, constituting less than 0.1% of all prostate cancers and typically arising from stromal or smooth muscle origin [1,2]. These tumors are known for their aggressive course, rapid growth, and poor prognosis, especially when diagnosis is delayed [3].
Their symptoms often mimic more common urological conditions such as BPH or adenocarcinoma, including lower urinary tract symptoms (LUTS), obstructive voiding, and hematuria [4]. Diagnosis can be challenging due to overlapping clinical and radiological features. MRI may aid in delineating the extent, but histopathological confirmation is crucial.

This case highlights the aggressive nature of prostatic sarcoma and the challenges in managing such tumours in patients with significant comorbidities.

1. **PRESENTATION OF CASE:**

A 51-year-old male, known to have ischemic heart disease (IHD) and chronic obstructive pulmonary disease (COPD), presented to the urology emergency unit with acute urinary retention. The patient reported obstructive lower urinary tract symptoms (weak urinary stream, intermittent passage of urine, incomplete emptying of bladder) over the past 6 months, which he had attributed to aging and had not sought medical attention earlier. He had no history of hematuria, weight loss, bone pain, or systemic symptoms. He had no personal nor family history of malignancy.

On physical examination, the patient appeared hemodynamically stable but was in discomfort due to bladder fullness. A per-urethral Foley catheter was inserted, relieving approximately 900 ml of clear urine. Digital rectal examination (DRE) revealed a markedly enlarged, irregular, hard prostate extending beyond the palpable borders, raising suspicion for malignancy.

Given the unusual DRE findings and patient’s age, an MRI pelvis was performed. MRI revealed a massive prostatic mass measuring approximately 1130 cc in volume, with significant intravesical protrusion, compressing the bladder neck and posterior wall of the bladder. The mass extended up to the pelvic wall laterally and showed heterogeneous enhancement, with areas of necrosis and poor capsule definition – imaging characteristics concerning for an aggressive neoplasm.

Serum PSA was mildly elevated at 5.2 ng/mL – not correlating with the prostate size. Given the discordance, a transrectal ultrasound (TRUS)-guided biopsy was performed. Histopathological evaluation revealed high-grade spindle cell proliferation, arranged in fascicles with marked nuclear atypia and brisk mitotic activity. Immunohistochemistry was positive for vimentin and desmin, confirming the diagnosis of prostatic sarcoma.

A metastatic workup including chest CT and abdominal imaging ruled out distant spread. Multidisciplinary tumour board evaluation was conducted, and considering the locally advanced nature of the tumor, anterior pelvic exenteration with ileal conduit urinary diversion was planned. However, during preoperative optimization, the patient developed acute exacerbation of COPD and worsening cardiac function due to which, he was considered very high risk case for General Anesthesia. Despite intensive care support, the patient succumbed to respiratory and cardiac complications before surgery could be performed.



Figure 1. Axial Image of CECT Abdomen & Pelvis showing large prostatic mass infiltrating the rectal mesocolon



Figure 2. Sagittal image of CECT Abdomen & Pelvis showing heterogeneous mass protruding into the bladder suggestive of areas of necrosis within the prostate.

1. **DISCUSSION:**

Prostatic sarcomas are exceedingly rare, with fewer than 200 cases reported in literature [5]. The most common histological types include leiomyosarcoma, rhabdomyosarcoma, and undifferentiated pleomorphic sarcoma [6]. The disease typically affects younger to middle-aged males, in contrast to adenocarcinoma which is more common in elderly males.

These sarcomas originate from mesenchymal elements of the prostate, such as smooth muscle, fibroblasts, or primitive stromal cells. Unlike adenocarcinomas, their development is not associated with PSA elevation, which often contributes to diagnostic delay [7].

The initial symptoms are often non-specific – including frequency, urgency, dysuria, and obstructive voiding. In our case, the patient presented with acute urinary retention, commonly attributed to benign prostatic hyperplasia in his age group. However, the massive prostate size, hard DRE, and poor correlation with PSA levels raised the index of suspicion [8].

MRI plays a pivotal role in characterizing prostatic masses. Features suggestive of sarcoma include large heterogeneous tumors with necrosis, local invasion, and lack of defined capsule – all seen in this case [9]. However, final diagnosis relies on histopathology, with immunohistochemical markers such as vimentin, desmin, and smooth muscle actin (SMA) helping confirm the mesenchymal origin [10].

Due to the rarity of the condition, there is no systematic or meta-analysis available in literature for standard treatment protocols. Complete surgical resection with negative margins remains the cornerstone of management [11]. Anterior pelvic exenteration is often required in cases with bladder or rectal invasion. Adjuvant radiotherapy or chemotherapy may be considered in high-grade tumors or incomplete resection, but evidence is limited [12].

Unfortunately, prognosis remains poor, with 5-year survival rates ranging between 20–40%, primarily due to late diagnosis, rapid local progression, and high metastatic potential [13].

1. **CONCLUSION:**

This case presents a rare instance of massive prostatic sarcoma mimicking benign or adenocarcinomatous prostate disease. It reinforces the importance of thorough evaluation in patients with disproportionate prostate size and poor PSA correlation. Atypical findings on DRE or imaging should prompt early biopsy.

Additionally, the case underlines the challenges faced in managing aggressive tumors in patients with significant co-morbidities and patient expired before the definitive treatment could be provided. Multidisciplinary assessment, early diagnosis, and timely intervention are critical in improving outcomes for such patients. Awareness of such rare differentials is essential for all urologists, radiologists, and pathologists involved in prostate disease management.

**ETHICS APPROVAL AND CONSENT**:

This retrospective case report follows the principles outlined in the Declaration of Helsinki (as revised in 2013). Given the retrospective nature of the report and use of de-identified patient data, the requirement for informed consent was waived off by the ethics committee.

**ABBREVIATIONS-**

TRUS- Trans Rectal Ultra Sonography

COPD- Chronic Obstructive Pulmonary Disease

**Disclaimer (Artificial Intelligence):**

We, authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text to image generators have been used during the writing or editing of this manuscript.

**REFERENCES:**

1. Sexton WJ, Lance RE, Reyes AO, et al. J Urol. 2001;166(2):521-525.

2. Montgomery E, Fisher C. Semin Diagn Pathol. 2005;22(4):274-283.

3. Hansel DE, Epstein JI. Am J Surg Pathol. 2006;30(9):1184-1192.

4. Galosi AB, et al. Rare Tumors. 2009;1(2): e57.

5. Amin MB, et al. WHO Classification. IARC; 2016.

6. Furtado VF, et al. Clinics. 2008;63(5):699-702.

7. Wang J, et al. Arch Pathol Lab Med. 2003;127(5): E62-E66.

8. Epstein JI. Urologic Surgical Pathology. Elsevier; 2020.

9. Yamamoto A, et al. Radiol Case Rep. 2020;15(11):2256–2261.

10. Wang L, et al. Oncol Lett. 2020;20(2):1802–1810.

11. Dotan ZA, et al. J Urol. 2006;176(5):2033-2038.

12. O'Sullivan PJ, et al. J Clin Oncol. 2006;24(11):1645-1651.

13. Sauter TW, Epstein JI. Hum Pathol. 1991;22(9):940-946.