

Case Report

Imaging of A Rare Prostatic Malignancy Prostatic Sarcoma

Dr. Mohideen Fathima Seeni Mohamed¹, Dr. Venkatraman Indiran², Dr. Kalaichezhian M³

¹Post Graduate Resident, Department of Radiodiagnosis, Sree Balaji Medical College and Hospital, Chromepet, Chennai - 600044

²Associate Professor, Department of Radiodiagnosis, Sree Balaji Medical College and Hospital, Chromepet, Chennai - 600044

³Assistant Professor, Department of Radiodiagnosis, SreeBalaji Medical College and Hospital, Chromepet, Chennai - 600044.

***Corresponding author**

Dr. Mohideen Fathima Seeni Mohamed

Email: drmdsulaiman@gmail.com

Abstract: Prostate malignancy is the second most common cancer in men .But among prostatic malignancies; prostatic stromal sarcoma (PSS) is quite rare accounting for only~ 0.1-0.2% of all malignant prostate tumors. Here in, we describe ultrasonography, computed tomography and magnetic resonance imaging (MRI) features of a prostatic stromal sarcoma identified in a 40-year-old man. MRI depicted the extent and infiltrating nature of the tumor with no zonal predilection. There was no lymphadenopathy, but distant metastasis to the liver was identified. Thus, the appearance of prostatic stromal sarcoma on CT and MRI was quite different from that of adenocarcinoma of the prostate. Furthermore prostate specific antigen level was also within normal limits.

Keywords: Prostatic stromal sarcoma, Magnetic resonance (MR), computed tomography.

INTRODUCTION

Prostate malignancy is the second most common cancer in men .But among prostatic malignancies; prostatic stromal sarcoma (PSS) is quite rare accounting for only~ 0.1-0.2% of all malignant prostate tumors [1]. Sarcoma of the prostate is a rare malignancy that affects younger men and has a poorer prognosis in comparison with prostate cancer[2]. Transrectal ultrasound (TRUS) abdominal ultrasound of the prostate is the main methods for early diagnosis. In advanced cases, computed tomography (CT) and magnetic resonance imaging (MRI) are important for staging and surgical planning. Treatment of prostate sarcoma consists of radical surgery, chemotherapy, and radiotherapy. Absence of metastasis at the time of diagnosis and negative surgical margins are more important for prognosis.

CASE REPORT

A 40 year old male patient came to the emergency department with complaints of pain abdomen, retention of urine and constipation for 2 days [3]. Patient had undergone laparotomy and band removal for small intestinal obstruction 3 years back.

Patient underwent an ultrasound abdomen (fig 1a) which showed a large heterogenous lesion in the prostatic region measuring ~ 8.1 x 8.0 x 9.0 cm with irregular margins extending posteriorly and superiorly. - possibility of prostatic malignancy was to be considered. A transrectal ultrasound (fig1b) was performed which showed dilated seminal vesicals along with the above same findings.

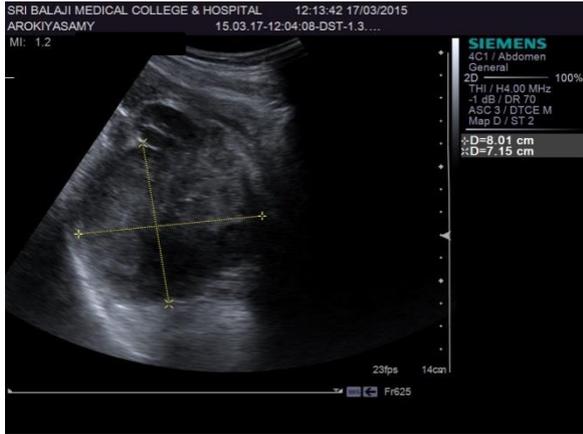


Fig-1a



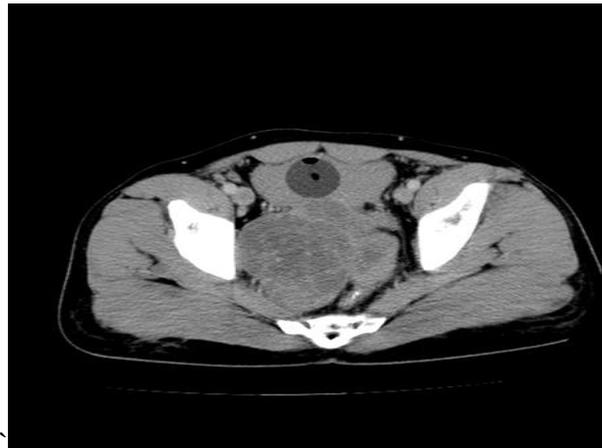
Fig-1b

His blood PSA level was normal measuring ~0.9 ng/ml (4 to 9 ng/ml are suspicious). Patient was referred for a contrast enhanced computed tomography scan (CECT) which showed a non-enhancing hypodense target lesion in segment VII of liver. A large heterogeneously enhancing mass lesion with lobulated margins was seen arising from the prostate gland and

seen extending posteriorly and superiorly (Fig 2a and 2b). The lesion involved the periurethral region in the prostate gland. The lesion is seen exerting mass effect over the rectum displacing it laterally towards the left side. A possibility of prostatic malignancy with liver metastasis was considered.



Fig 2a



2b

Subsequently patient underwent non enhanced magnetic resonance imaging (MRI) of the abdomen which showed a large heterogeneous lesion measuring ~9.0 x 9.9 x 8.1 cm with lobulated margins arising from the prostate gland and seen extending posteriorly and superiorly. The lesion was seen exerting mass effect over the rectum, displacing it laterally towards the left side. Inferiorly the lesion was seen abutting the right levator ani, thinning it and displacing it downwards. The

lesion was also seen abutting the right pelvic side wall and obturator internus muscle. Left seminal vesicle appeared normal and displaced superiorly. Linear T2 hyperintense structure with wavy margins noted along the superior aspect of the prostatic lesion, to the right of midline probably a stretched right seminal vesicle. No significant pelvic lymphadenopathy was noted. (Fig 3a, 3b and 3c).



Fig 3a, 3b, 3c

On account of a large prostatic malignancy with no zonal predilection, absent lymphadenopathy [4] and PSA negativity, a possible diagnosis of prostatic stromal sarcoma and less likely a prostatic adenocarcinoma was given. Patient was referred for surgery which showed no discernible plane between the

mass and the rectum, hence enmasse resection of prostate, bladder and rectum done. Ureter sigmoid anastomoses with end sigmoid colostomy was done and patient referred for chemotherapy. Resected mass was sent for biopsy (fig 4) which proved to be prostatic stromal sarcoma.

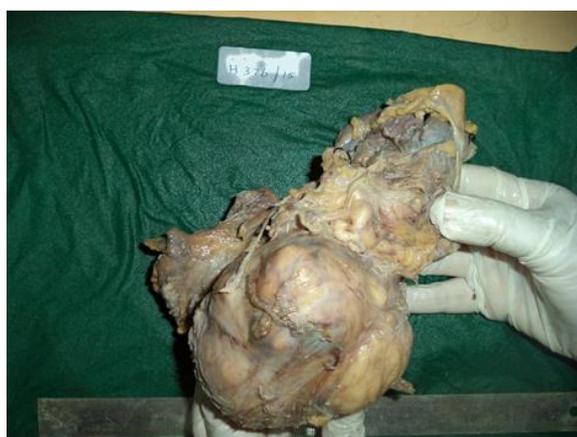


Fig 4

DISCUSSION

Prostatic stromal sarcoma is a rare malignant neoplasm that is believed to originate from specialized stromal prostatic cells [5]. Sarcomas arising in the prostatic stroma in children are virtually always rhabdomyosarcomas [6]. The prostate has a complex stromal-epithelial interaction that responds to hormonal stimulation that is responsible for prostatic epithelial morphogenesis, differentiation, proliferation, and expression of prostate-specific proteins. It is believed anomalous or exaggerated stimulation in these pathways may give origin to stromal sarcoma [7]. Prostate sarcoma occurs more often in younger men, before 40 years, in comparison with prostate cancer, which affects mostly older men [8]. Macroscopically, PSS can be solid or mixed with cystic areas. Necrosis and hemorrhage may also occur, especially in high-grade tumors. Size varies (2–18 cm) in the reported cases; interestingly, size does not correlate with the

grade or clinical behavior of the tumor. The tumor tends to occupy the majority of or the entire prostate. Microscopically, PSS is characterized by proliferation of spindle and ovoid stromal cells, some of which poses atypical nuclei, scattered mitotic figures, and necrotic foci. PSS is divided into low-grade and high-grade tumors based on moderate to high cellular atypia and hypercellularity in high-grade tumors. Prostate sarcoma hence should be included in the differential diagnosis of a large prostatic mass with heterogeneous/ low enhancement of the contrast material and metastasis without lymphadenopathy in a young patient with normal PSA levels.

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