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Case Report

A Rare Case of Synovial Sarcoma of the Prostate

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ABSTRACT

Prostatic synovial sarcomas are exceedingly rare. To our knowledge, only six primary cases have been reported so far. We herein describe a primary synovial sarcoma of the prostate seen in a 25-year-old male patient, the youngest patient seen with this disease to date. He was referred to our department with the diagnosis of high-grade sarcoma of the prostate revealed by TRUS-guided biopsy. On admission he had a transurethral catheter for acute retention of urine. MRI revealed a solid prostatic tumor of 9.5 x 8 cm involving the rectum without any evidence of lymphatic or distant metastases. The patient underwent total pelvic exenteration and sigmoid end colostomy with ileal conduit. Histopathology revealed a synovial sarcoma of the prostate, immunoreactive to vimentin, Bcl–2 and cytokeratin. The patient is doing well at 18 months follow-up.

Key Words: Prostatic sarcoma, prostatic malignancy, prostate, synovial sarcoma.

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INTRODUCTION

Synovial sarcoma is a malignant mesenchymal tumor that typically arises in the para-articular soft tissues of the lower extremities in young adults. The tumor is believed to arise from primitive mesenchymal cells that have differentiated to resemble synovial cells under light microscopy. Only 6 primary cases[1-5] of synovial sarcoma of prostate have been reported in the literature. In view of its rarity and undefined management protocol we are reporting the youngest reported case to date.

CASE REPORT

A 25-year-old male patient was referred to our department from a secondary care center with the diagnosis of a high-grade sarcoma of the prostate diagnosed by transrectal ultrasound (TRUS)-guided biopsy. On admission he had a transurethral catheter for acute retention of urine. He also had a foul-smelling mucoid and blood-stained discharge per rectum. Rectal examination revealed grade-III prostatomegaly and a tumor involving the anterior rectal wall at the base and mid zone of the prostate. Histopathological review of the biopsy specimens confirmed the diagnosis. All hematological and biochemical investigations were normal. Serum PSA was 1.7 ng/ml. Magnetic resonance imaging (MRI) of the abdomen and pelvis revealed a solid prostatic tumor of 9.5 x 8 cm involving the rectum, without significant lymphadenopathy or evidence of distant metastases (Fig. 1). The bone scan was normal. Urethroscopy revealed a shaggy and ulcerated prostatic urethra, completely invaded by the tumor. The bladder could not be entered.

Surgical exploration was carried out via a midline incision. There was a large mass involving the prostate, bladder base and anterior wall of the rectum, extending to, but not invading the lateral pelvic walls. Only the most distal part of the rectum was tumor-free. A total pelvic exenteration with sigmoid end colostomy and ileal conduit was performed.

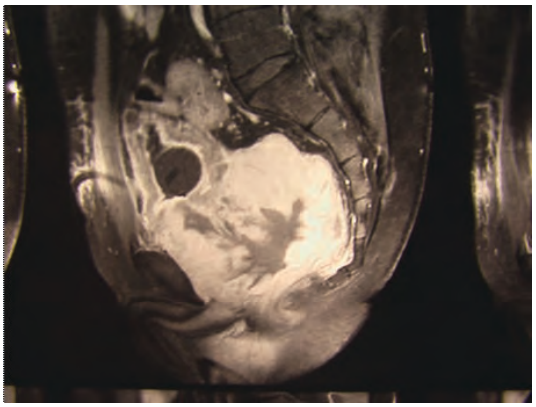

Fig. 1: MRI of the abdomen and pelvis showing a solid prostatic tumor with central necrosis involving the rectum and pushing the bladder anteriorly and superiorly.

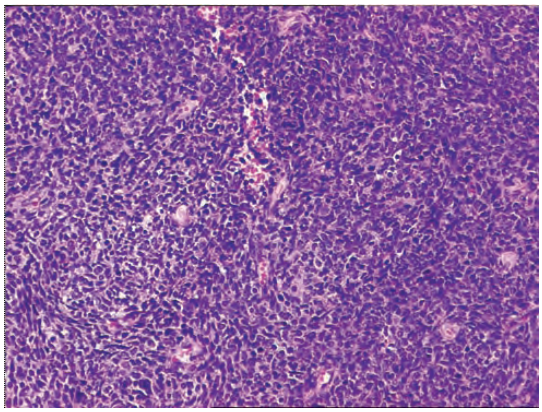

Fig. 2: Histopathology study of the specimen (HE x 400). The tumor was mainly composed of uniform spindle cells with cellular atypia and few interposed immature epithelioid cells.

Complete local clearance was achieved. The post-operative period was uneventful. The final histopathological examination revealed a synovial sarcoma of the prostate with surgical margins free of tumor (Fig. 2). On immunohistochemistry, the tumor cells were immunoreactive to vimentin, Bcl–2 and focally for cytokeratin. Immunostaining for S100 and calponin was negative, which was compatible with synovial sarcoma of the prostate.

DISCUSSION

Synovial sarcoma accounts for 7-10% of all sarcomas[1]. Primary synovial sarcoma occurs in a variety of unusual locations, but rarely in the genitourinary system. Renal involvement has been reported more often, but prostate involvement is extremely unusual[1,2]. It arises from primitive mesenchymal cells which resemble synovial cells under light microscopy. The tumor is composed of two morphologically different types of cells, epithelial and spindle, and is classified as having a biphasic or monophasic pattern, depending on the proportions of these cells. As compared with the most common malignant tumor of the prostate, adenocarcinoma, prostatic sarcoma occurs in relatively younger patients. According to previous reports, the age at diagnosis of these patients was 37–63 years[1-5]. We are reporting the youngest patient with locally advanced disease, lower abdominal and perineal pain and retention of urine.

Sarcomas are radioresistant with poor response to chemotherapy. Hence, aggressive surgical treatment consisting of total pelvic exenteration with end sigmoid colostomy and ileal conduit was considered in view of the patient's young age and the absence of lymph node involvement and distant metastases. Immunohistochemically proven bcl-2 positivity supported the diagnosis, because the anti-apoptotic protein bcl-2 was recently reported to be well expressed in synovial sarcoma[5,6]. The tumor cells are also immunoreactive to vimentin and, focally, to cytokeratin. An immunostain for S100 and calponin was negative. Detecting the translocation t(X; 18) (p11.2; q11.2) and chimeric SYT-SSX gene by using fluorescence in situ hybridization or RT-PCR has been shown to be useful in diagnosing this disorder[1,6,7].

In conclusion, due to the rarity of synovial sarcoma involving the prostate, no definitive treatment protocol has been clearly established. It appears that aggressive resection should be the rule. The documentation of further cases will be needed to establish the appropriate therapy.

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