Leiomyosarcoma of urinary bladder- A case report

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Abstract: Mesenchymal tumors of the urinary bladder are rare and range from tumor like lesions such as pseudo sarcomatous myofibroblastic proliferations and proliferative spindle cell nodules to malignant tumors such as rhabdomyosarcomas and leiomyosarcomas. Sarcomas of the urinary bladder account for less than 5 percent of all bladder tumors and include conditions like rhabdomyosarcoma, leiomyosarcoma, angiosarcoma and undifferentiated sarcoma (malignant fibrous histiocytoma). Rhabdomyosarcoma is the commonest malignant mesenchymal tumor in children, whereas leiomyosarcoma is common in adults. Leiomyosarcoma of bladder accounts for less than 1 percent of all bladder tumors. Hence the CT findings and histological features of a case of leiomyosarcoma of bladder in a 55 years old female are reported.

Keyword: Urinary bladder - mesenchymal neoplasms - sarcomas - leiomyosarcoma.

Introduction: The soft tissue tumors of urinary bladder include tumor like conditions, benign neoplasms and sarcomas. The common tumor like conditions are inflammatory myofibroblastic tumor and proliferative spindle cell nodule. Benign neoplasms reported in bladder include leiomyoma, hemangioma and neurofibroma. Sarcomas account for less than 5% of all urinary bladder tumours and include conditions like leiomyosarcoma, rhabdomyosarcoma, angiosarcoma and undifferentiated sarcoma. These spindle cell sarcomas need to be distinguished from sarcomatoid carcinoma as the treatment protocols and clinical behaviour differ in both conditions. Leiomyosarcoma is the commonest of all sarcomas of bladder and about 192 cases of sarcomas of urinary bladder have been reported in the world medical literature, in which about half of the cases are leiomyosarcomas [3].

Case report: A 55 years old female presented with complaints of painless haematuria with clots of 2 months duration with a total of six episodes. She also complained of dribbling of urine for the past 10 days. On general examination she was afebrile, her vitals were stable. Per abdominal examination revealed tenderness in lower abdomen. Urinary meatus and cervix appeared healthy. A mass was felt in the fornices on vaginal examination. CT abdomen and pelvis showed right hydroureteronephrosis with a growth occupying the right side of lateral wall of the bladder (Figure 1). Urethrocystography showed a mass in the base of the bladder extending up to right lateral wall and obscuring both ureteral orifices. Bladder dome, urethra and meatus were normal. Biopsy was taken from the growth and sent for histopathological examination.

Figure 1: CT picture showing broad based polypoidal growth arising from right lateral wall of urinary bladder
Microscopic examination showed a highly cellular neoplasm composed of interlacing bundles and fascicles of spindle shaped cells containing elongated nuclei with blunt ends. Nuclei showed mild to moderate atypia, occasional prominent nucleoli and <5mf/10 hpf. No necrosis was seen in the material received (Figure 2 & 3). With the above histological features a tentative diagnosis of low grade leiomyosarcoma was made. For confirmation, immunomarkers vimentin and smooth muscle actin were done. Both showed positivity. Vimentin(Figure 4) is a nonspecific marker and Smooth muscle actin (Figure 5) was a specific marker for smooth muscle.

Figure 2: H & E Low Power View showing interlacing fascicles and bundles of spindle shaped cells

Figure 3: Vimentin stain showing positive reaction in the spindle cells.
leiomyosarcoma. Epithelioid leiomyosarcoma has rounded cells with vacuolated cytoplasm and myxoid variants show thin walled blood vessels in myxoid stroma.

**Discussion:**
Leiomyosarcoma, the commonest malignant mesenchymal neoplasm of urinary bladder in the adults is seen in 6th – 8th decades of life with a slight male preponderance [1]. Use of cyclophosphamide drug and pelvic irradiation are described as the risk factors[3]. Acrolein, the degradation product of cyclophosphamide is considered to be the carcinogenic agent. Clinical presentation is similar to that of transition cell carcinoma of the bladder, haematuria being the most common complaint followed by dysuria, abdominal mass and supra pubic tenderness[4]. Cystoscopy usually reveals submucosal polypoid lesions with or without mucosal ulcerations. Rarely they may appear as extravesical protrusions. Unlike this case, most often they arise from dome of the bladder rather than from the lateral wall. Macroscopically the tumors are polypoidal, large, unencapsulated with mucosal ulcerations. Cut surface is often firm and fleshy as in other sarcomas and may show fibrous or myxoid appearance. Microscopically, they are classified into low grade and high grade lesions to assess the prognosis. Low grade lesions show mild to moderate cytological atypia, < 5mf/10 hpf, minimal necrosis and infiltrative margins. High grade tumors show moderate to severe atypia, >5mf/10 hpf & abundant necrosis[5]. The morphologic variants include epithelioid leiomyosarcoma and myxoid

**References:**