VOLUME - 12, ISSUE - 03, MARCH - 2023 • PRINT ISSN No. 2277 - 8160 • DOI : 10.36106/gjra

Original Research Paper

Urology

HISTOLOGICAL VARIANTS OF BLADDER TUMORS : DIAGNOSTIC, PROGNOSTIC AND THERAPEUTIC IMPLICATIONS – A CASE SERIES

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ABSTRACT Bladder cancer is one of the leading malignancies in the world associated with significant morbidity and mortality. About 80% of a bladder cancer is urothelial variant, remaining 20% will have a divergent histological presentation. The pathophysiological study of these variants has recently increased because the therapeutic approach is not uniform for all variants. These variants have important diagnostic, prognostic and therapeutic implications. A molecular and genetic study of these variants will allow them to be better defined. Here we present four cases of Histological variants of bladder tumors with varying presentations in the department of urology, Madurai medical college, which is studied over the period of one year (2022-2023).

KEYWORDS : Inflammatory myofibroblastic tumor, Invasive Urothelial carcinoma with squamous differentiation, Urothelial papilloma, Cystitis cystica.

Case 1

28 year old female presented with complaints of Dysuria of 1 month duration. Moderately build patient with no comorbidities. She has no occupational exposures and no family history of malignancy. Ultrasound abdomen revealed 7.6 x 4.8 cm large pedunculated mass lesion arising from posterior wall of bladder.

Contrast enhanced computed tomography (CECT) (fig 1.1) revealed 7.3 x 4.5 cm large pedunculated mass lesion arising from posterior wall of bladder. Urine cytology was negative.

Patient underwent Diagnostic cystoscopy followed by Transurethral resection of bladder tumor (TURBT). Growth was completely resected.

Resected specimen was sent for histopathological examination which showed tumor tissue composed of spindle shaped cells arranged in fascicles and sheets (fig 1.3). There was no increase in mitotic activity or atypia. Interspersed inflammatory cell infiltrate comprising predominantly of lymphocytes . Areas of necrosis and myxoid changes was present (fig 1.2).

Immunohistochemistry study shows

1) ALK-1 - Diffuse strong positive (fig 1.4)
2) SMA - Positive
3) CK – Positive (fig 1.5)
4) Desmin - Focal positive
5) h-Caldesmon - Negative

Imp - Inflammatory Myofibroblastic Tumor

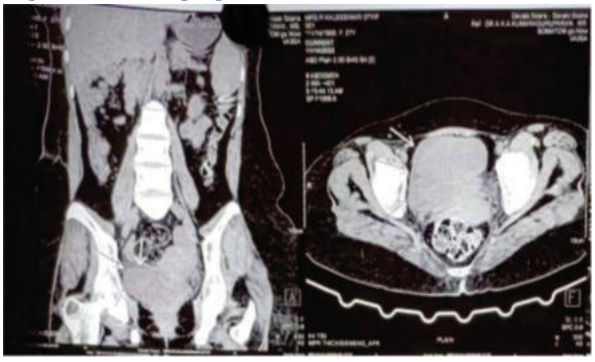


Fig (1.1)

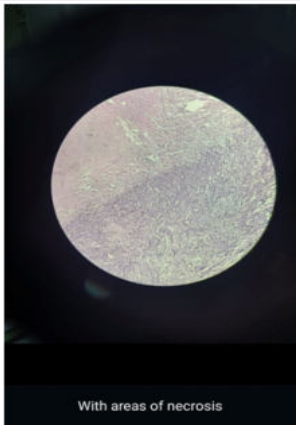


Fig (1.2)

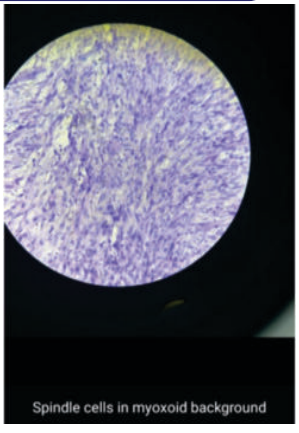


Fig (1.3)

Fig (1.4)

Fig (1.5)

Patient presented to the tumor board and medical oncologist adviced for routine follow up. After 1 year of follow up patient is doing well with no recurrence on follow up scans.

Case 2

54 year old male patient presented to our department with abdominal pain and hematuria of five days duration associated with fever and Dysuria. Patient is a known case of type 2 DM since 10 years on treatment. He had a history of previous surgery i.e. Open Cystolithomy five years back. Patient was moderately built. On examination patient had a lump over suprapubic region which was firm and tender. Contrast enhanced computed tomography (CECT) (fig 2.1,2.2) revealed a Ill defined polypoidal minimally enhancing mass lesion in Anterior wall of bladder extending into Anterior

abdominal wall into subcutaneous space. Also few other small irregular minimally enhancing polypoidal projections noted in posterior wall of bladder. No pelvic lympha denopathy. Possibility of carcinoma of bladder with abdominal wall infiltration. Urine cytology was negative. Metastastic workup showed no Lung and bone metastasis.

Patient underwent Diagnostic cystoscopy with Transurethral resection of bladder tumor (TURBT). Growth was resected completely. Resected specimen was sent for histopathological examination- superficial tumor tissue shows features suggestive of **Urothelial carcinoma with squamous differentiation** and deep muscle specimen shows tumor invasion.

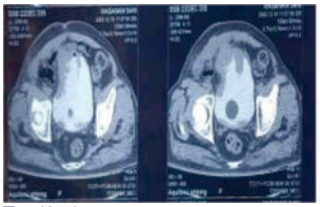


Fig (2.1)

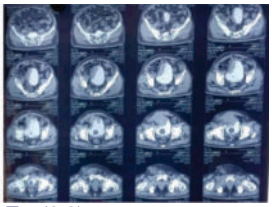


Fig (2.2)

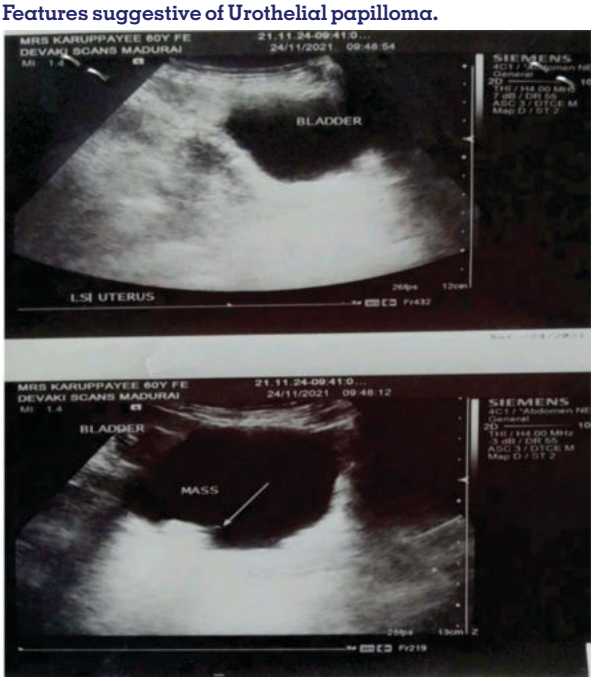
Following multidiscipllinary discussion patient was planned for palliative chemotherapy (Gemcitabine and Cisplatin) and Radiotherapy.

Case 3

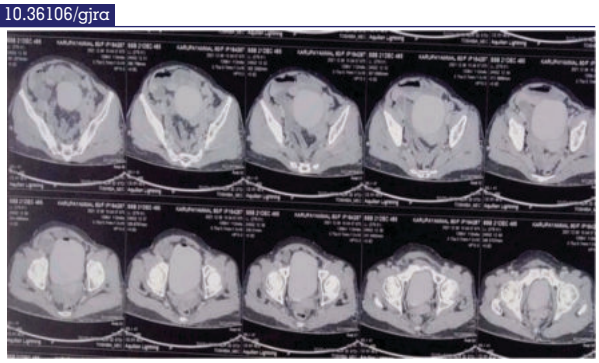
60 year old female patient presented with Intermittent hematuria since one year associated Dysuria. Patient was thin built with no comorbidities. Ultrasound KUB showed 2.3 x 1.9 x 1.1 cm irregular hypoechoic mass in right lateral wall close to ureterovesical junction. Contrast enhanced computed tomography (CECT) (fig 3.1,3.2) revealed a 1.2 x 0.4 cm polypoidal mass noted in right posterolateral wall adjacent to right vesicoureteric junction with no hydroureteronephrosis.

Patient underwent Dignostic cystoscopy with Transurethral resection of bladder tumor (TURBT). Growth was resected completely. Resected specimen was sent for histopathological examination. Histopathological examination showed neoplasm composed of urothelial cells arranged in papillae with central fibrovascular core. No cytological atypia or mitosis seen in the section studied.

Features suggestive of Urothelial papilloma.



Fig(3.1)



Fig(3.2)

Patient was followed up for period of 1 year with no recurrence.

Case 4

26 year old male admitted with complaints of Increased urinary frequency associated with Dysuria of 3 months duration. Patient was moderately built with no comorbidities. Urine culture showed no growth. Ultrasound KUB showed focal polypoidal wall thickening of bladder. Contrast enhanced computed tomography (CECT) revealed irregular thickened bladder wall.

Patient underwent Diagnostic cystoscopy under spinal anesthesia which showed bullous edema throughout bladder wall. Biopsy was taken and sent for Histopathological examination. Histopathological examination showed Transitional lining epithelium of bladder mucosa and underlying invaginated urothelial nests with central lumen lined by urothelial cells and filled with eosinophillic material surrounding lamina propria show edema and congestion. There is no evidence of granuloma/ malignancy in the section studied.

Impression-Features suggestive of Cystitis cystica.

Patient managed with antibiotics, analgesics and anticholinergics. Patient symptomatically improved on follow up.

DISCUSSION

Carcinoma bladder seventh most common diagnosed cancer in men and its incidence is steadily rising worldwide. Peak incidence is in the sixth decade. Men are at three to four times risk compared to women to develop disease. Most common presenting symptom is painless hematuria. Cystoscopy remains the gold standard investigation for diagnosing carcinoma bladder. Development of bladder cancer influenced by various risk factors including male sex, older age, occupational exposure to various chemicals, pelvic radiation, cigarette smoking, chronic bladder irritation or infection, personal or family history of carcinoma bladder.

Inflammatory myofibroblastic tumour of the urinary bladder is a rare condition and it has unknown aetiology. More frequently found in young women than in men and are rare in children. Several predisposing factors have been described, such as recurrent cystitis and prior urinary bladder surgery, but the cause and the pathogenesis remain controversial. Due to the lack of specificity in clinical symptoms, the final diagnosis depends on histopathological features and the immuno histochemistry. Inflammatory myofibroblastic tumour of the urinary bladder usually follows a benign clinical course. Therefore, the optimal curative management is conservative surgery, transurethral tumour resection. There are no standardized schemes regarding follow-up, but it is advisable since this tumour has 25% recurrence.

Urothelial carcinoma with squamous differentiation was defined as the presence of Urothelial Carcinoma and Squamous Differentiation in the same tumor. Typically presents in cases that are more invasive and advanced than

cases observed with pure urothelial carcinoma. 60% to 70% of the cases being muscle-invasive bladder cancer. Several studies have suggested that these tumor has more aggressive behavior and worse survival outcomes when compared to pure Urothelial Carcinoma in locally invasive bladder cancer.There is poor response of these tumor to cisplatin-based chemotherapy. Lymph-node involvement by tumor was seen in 20.0% of patients with urothelial carcinoma and focal squamous differentiation and in 46.2% of patients with urothelial carcinoma and extensive squamous differentiation.

Urothelial papilloma is an uncommon benign exophytic neoplasm composed of a delicate fibrovascular core covered by normally appearing urothelial layer. Rare urothelial neoplasm with a benign clinical course: rare recurrence if completely excised. Male to female ratio is 1.9:1 and often present with hematuria. The incidence is low, usually 1%-4% of all bladder tumors. The diagnosis only made by histopathological examination of the specimen obtained by cystoscopy with transurethral resection

Cystitis cystica is a benign inflammatory reaction of the urothelium to infection or mechanical irritation. The diagnosis is made with a cystoscopy. It affects both males and females, with a higher prevalence in males. Cystitis cystica develops when the urothelial cells in the lumens of von Brunn's nests degenerate, leaving cystically dilated vesicles. Initial treatment for symptomatic cases includes treatment of urinary tract infection, pelvic floor exercises, bladder training, NSAIDs, and/or overactive bladder medications. Intravesical gentamicin or D-mannose can be considered in few selected cases of recurrent urinary tract infections.

CONCLUSION

Urologists need to be aware of the possibility of rare cases of bladder tumor and their presentation. For diagnosis and treatment, Diagnostic cystoscopy and biopsy is the most effective method. However, several benign lesions of the bladder can mimic urothelial carcinoma clinically and radiologically owing to overlapping signs and symptoms. Thus, rendering a correct diagnosis is imperative as it will have a significant impact on the management of patients.

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