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Case Report

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PRIMARY URINARY BLADDER SMALL CELL CARCINOMA MASQUERADING AS TRANSITIONAL CELL CARCINOMA: A DIAGNOSTIC AND THERAPEUTIC CHALLENGE

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INTRODUCTION

Small cell carcinoma of the urinary bladder is an extremely rare tumor accounting for less than 1% of all cancers arising from the bladder.[1] The tumor shares similar histological features with the small cell carcinoma originating at the other sites in body. However, its similar clinical features like the conventional transitional cell carcinoma of the bladder, tendency to present at a advanced stage and low immunoreactivity to the conventional neuroendocrine markers makes the early diagnosis challenging and simultaneously crucial for the patient's survival.[2]

Considering the very few number of case reports available in the literature and lack of the definitive data predicting the therapeutic response to various modalities, we, herein, describe a case of small cell carcinoma originating in the urinary bladder and diagnosed and treated in our institute.

CASE REPORT

A 65 year old male presented to the emergency department with gross hematuria and severe pelvic pain. The patient also gave history of an episode of hematuria 15 days back which subsided uneventfully and hence ignored by the patient. The patient had been a chronic smoker. Physical examination was unremarkable. The patient underwent routine investigations. On CECT, a solid polypoid growth measuring 5x3 cms was identified on the posterior bladder wall. Abdominal and chest CT did not reveal any distant metastasis. Exfoliative urine cytology did not reveal any lesional cells. Transurethral resection of the bladder tumor was performed and sent for histopathological examination. The tissue was received in multiple grey-white to grey-yellow pieces measuring 6x3x1 cms. Microscopy showed diffuse and patternless proliferation of small round cells with high N:C ratio, scant cytoplasm, pyknotic round to oval nuclei and evenly dispersed "salt and pepper" chromatin (fig.1,2). On immunohistochemical staining, the tumor cells were CK, EMA, and LCA negative (fig. 3,4). However, they showed strong membranous positivity for synaptophysin (Fig 5), confirming the neuroendocrine origin of the tumor. The patient was put on cisplatin based chemotherapy regimen and is doing well on follow up.

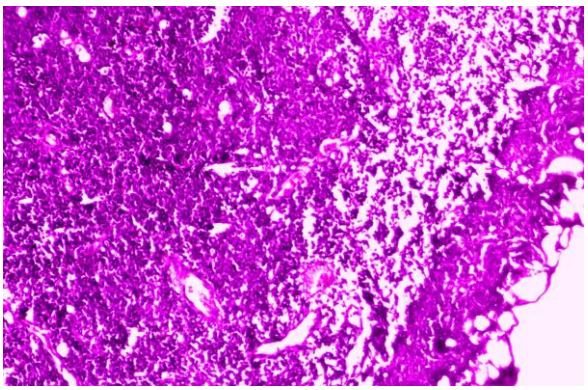

Fig 1. Photomicrograph showing infiltration of Urinary Bladder by small round tumor cells. (H&E, 40X)

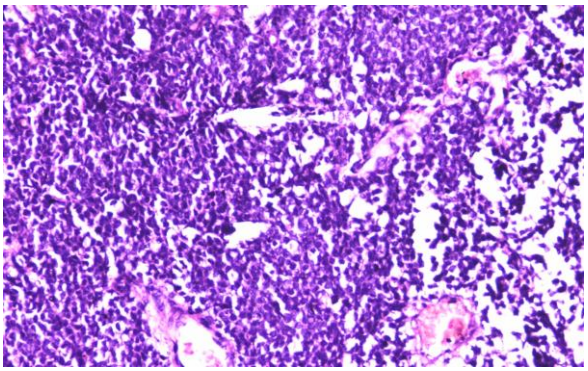

Fig 2. Photomicrograph showing dense small round cell tumor infiltrate in Urinary Bladder. (H&E, 200X)

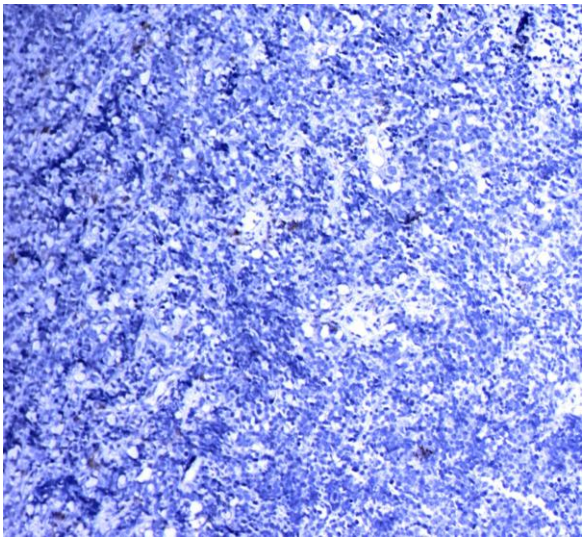

Fig3. Micrograph showing negative immunoexpression of Cytokeratin in tumor cells. (IHC, 40X)

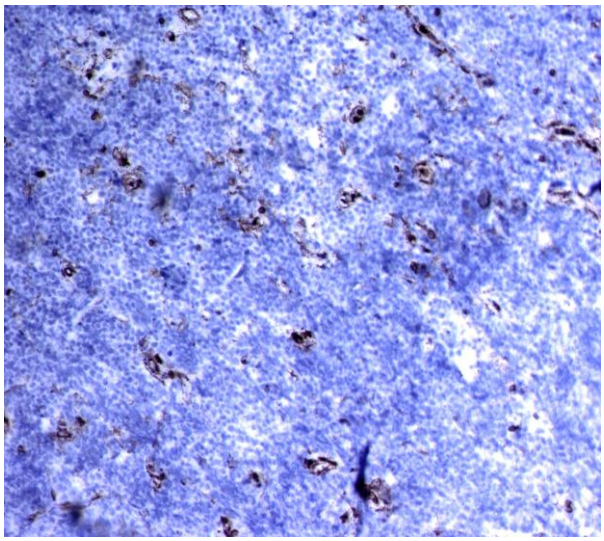

Fig 4. Shows negative immunoreactivity of LCA in tumor cells. (IHC, 40X)

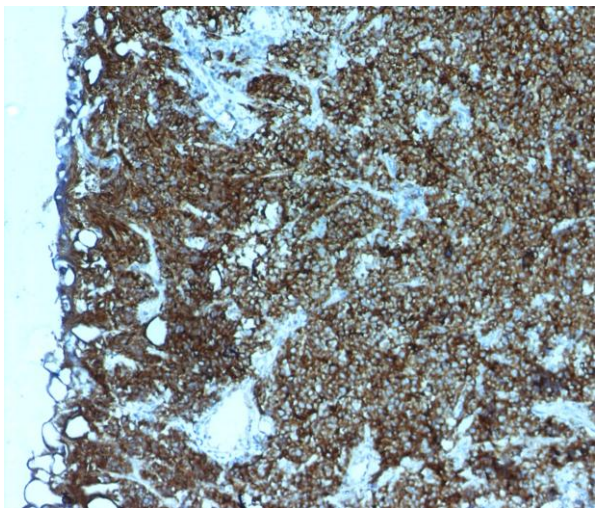

Fig 5. Shows positive immunoreactivity of Synaptophysin in tumor cells. (IHC, 40X)

DISCUSSION

Neuroendocrine tumors which account for only 1% of the primary bladder tumors comprise of large cell carcinoma, small cell carcinoma, paraganglioma and carcinoid tumor. However, the most common is small cell carcinoma comprising 0.48-1% of primary bladder tumors.[3] The pathogenesis of the tumor is still unknown. The possible mechanisms may be associated with loss of genetic material, hypermethylation of tumor suppressors and amplification of the chromosomal regions carrying oncogenes.[4] The risk factors are still unknown but they may be related to chronic smoking, long standing cystitis, bladder lithiasis or augmented cystoplasty. The small cells have been hypothesized to originate from the totipotent stem cells in the submucosa of urinary tract rather than from a specific neuroendocrine precursor cell.[3]

The clinical features are indistinct from those of transitional cell carcinoma of urinary bladder and the primary symptomatology is gross hematuria. Also there may be dysuria and flank pain. Patient presents late and the disease has an aggressive outcome. The prognosis of the disease is poor with an overall 3-year survival rate of 13-27%.[3] Because of the rarity and the resulting paucity of clinical trials, no definitive treatment algorithm for the disease has yet been described. According to the literature, the treatment options vary greatly. For the surgically resectable tumor, neoadjuvant chemotherapy followed by radical resection is the treatment of choice. Sequential chemoradiotherapy may be another treatment option for such cases. In advanced stages, cisplatin based chemotherapy should be considered as the treatment of choice for patients with good performance status and good renal function. The treatment should be based on neuroendocrine regimen- etoposide plus cisplatin or ifosfamide plus doxorubicin at day 1 and etoposide plus cisplatin at day 21. Cisplatin can be substituted by carboplatin in patients showing side-effects with the former.[5]

CONCLUSION

Small cell carcinoma of the urinary bladder is a distinct histological and biologic disease entity with an aggressive clinical course, dismal prognosis, and average life expectancy of only few months. Currently, debulking treatment may offer some survival benefit in few patients. However, still a definite therapeutic approach to overcome the grave prognosis of this rare disease is a matter of debate.

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