Abstract:
Small cell carcinoma of prostate is a rare malignant tumour of prostate. The therapeutic implications of this finding are of significance because tumours demonstrating this phenotype usually represent an inherently endocrine-resistant subtype and, in view of their different clinical and biologic properties compared with the usual adenocarcinoma of the prostate, these tumours usually require different treatment strategies.

Keyword: Prostate, chromogranin A, neuron specific enolase, trans rectal usg

CASE REPORT:
A 65 year old male was admitted with complaints of obstructive lower urinary tract symptoms for one year. He had no loin pain. He had no fever or vomiting. On examination he was afebrile and his vitals were stable. Abdomen was soft and his external genitalia were normal. Per rectal examination revealed hard nodular prostate. His complete blood count, renal function test and serum prostate specific antigen levels were normal. Transrectal ultrasound showed hypo echoic lesion in both the lobes of prostate. Transrectal ultrasound guided biopsy was taken and the biopsy report was small cell carcinoma of prostate.

High power view of a prostatic small cell carcinoma showing sheet like growth pattern, high N/C ratio of tumor cells, nuclear molding, fine chromatin, and brisk mitotic and apoptotic figures

Immunohistochemical study of the small cell carcinoma of prostate is positive for chromogranin A
Contrast enhanced computed tomography of abdomen and pelvis, bone scan and x-ray chest were normal. Since small cell carcinoma of prostate hormone resistant, he was started on palliative chemotherapy with cisplatin and etoposide and radiotherapy. Patient is on regular follow up with gradual improvement in obstructive urinary symptoms.

DISCUSSION:
Most patients with small cell carcinoma of prostate are symptomatic at diagnosis, unlike patients with prostatic adenocarcinoma alone. Signs and symptoms in order of frequency include, obstructive, neurologic and constitutional symptoms followed by symptoms from paraneoplastic syndromes, bone pains, hydronephrosis, abdominal pain, haematuria and disproportionately low levels of prostate specific antigen levels even in the presence of metastatic disease, visceral metastasis, lytic bone metastasis, hypercalcaemia and elevated plasma chromogranin levels. Such tumours express a number of biologic characteristics unique to neuroendocrine tumours that can also arise from other organs, most commonly the lung. Among these are the expressions of receptors to various neuroendocrine peptide growth factors, such as somatostatin, chromogranin A, and serotonin, as well as parathyroid hormone-related protein (PTHrP) and TP53 mutations. These tumours have an uncharacteristic clinical behaviour (compared with the usual metastatic prostate cancer), reflected by frequent visceral involvement and rapidly growing soft tissue metastases. Patients frequently present with sub acute and often dramatic changes in their disease pattern characterized primarily by a rapidly growing soft tissue mass (frequently involving the primary site but also with retroperitoneal masses), rapid development of visceral (lung and liver) infiltration, osteolytic (as opposed to osteoblastic) bone metastasis, and a high incidence of parenchymal brain involvement.

Histologic evaluation of areas demonstrating rapid growth is strongly encouraged. This frequently culminates with demonstration of a small cell variant or a poorly differentiated neoplasm on pathology and the presence of neuroendocrine markers on immunostaining. Interestingly, patients with this tumour phenotype either stop expressing PSA in the presence of major tumour progression or even have undetectable PSA levels at the time of this transformation.

Treatment is usually similar to that of patients with other neuroendocrine tumors (e.g., small cell carcinoma of the lung) and includes combinations of cisplatin (or carboplatin) and etoposide, paclitaxel, docetaxel, and topotecan. Doxorubicin-containing combinations have been reported to be moderately effective. Radiation therapy is effective and should be considered in cases with bulky disease, with brain metastasis, or when local disease control in critical areas may have a positive impact on quality of life (pain, potential pathologic...
A combined chemotherapy and radiation therapy approach is frequently necessary to accomplish maximal disease control. Despite high initial response rates with chemotherapy and radiation treatment, the prognosis of these patients remains poor and is dependent on various factors, including extent and location of metastases.

CONCLUSION:
Primary small cell carcinoma of the prostate is very rare. Though chemotherapy and radiotherapy are effective, overall prognosis remains poor.

REFERENCES:


