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IM - CASE RECORD

Paraneoplastic syndrome as a manifestation small cell carcinoma of the prostate: a rare presentation within a rare tumor

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Case presentation

A 76-year-old man was admitted to our department for difficulty walking, weight loss, hallucination and slow speech. A few days later, the patient's visual and tactile hallucinations started, and swallowing difficulty developed. The patient suffered from instability while sitting and standing. He lost weight from 78 to 71 kg in 2 months. His past medical history is unremarkable. Physical examination reveals a supine BP of 140/80 mmHg and a standing BP of 100/60 mmHg. He is subfebrile, and appears tired. He smoked half a pack of cigarettes for 30 years but quit 10 years before. His lungs are clear to auscultation. The abdomen is soft and non-tender without organomegaly. Neurologic examination reveals deep tendon reflexes reduced. Cranial nerve examination is normal. He is not oriented to time or place, and responds inappropriately to questioning. A stiff neck is absent. Brain CT did not show any abnormalities. Laboratory results are erythrocyte sedimentation rate 60 mm/h, C-reactive protein 15 mg/L. In the cerebrospinal fluid (CSF) analysis, the ratio of monocyte, macrophages and protein was increased. No antibodies were detected in the CSF. Computed tomography (CT) documented heterogeneity in the prostate gland and iliac adenomegalies. Prostate-specific antigen (PSA) is normal, 0.424 ng/mL. FDG positron emission tomography (PET) scan showed hypermetabolism in the prostate and iliac ganglionic areas. A brain MRI was performed after the patient's hallucinations, showing bilateral frontoparietal hypersignal intensity. The patient's status worsens progressively during the first 72 h of hospitalization. There were episodes of loss of consciousness, in which the patient suddenly fell to the ground after standing up and regained consciousness after 10–20 s without urinary incontinence. The mental state of the patient started deteriorating during the day. Electromyography has revealed a polyneuropathy in which the sensory fibers were affected. Anti-Hu antibodies in high titers were found in a serum sample. The patient was treated with intravenous immunoglobulin (IVIG), but dysphagia gradually increased. Food residues due to esophageal motility disorder were determined in gastroscopy. Transrectal ultrasound guided prostate biopsy was taken. Department of Pathology confirmed small cell carcinoma of the prostate (SCCP). Immunohistochemical examination showed positivity for neuroendocrine markers (CD56, synaptophysin, and chromogranin A) and absence of expression of CK7 and PSA (Fig. 1). Ki67 proliferation index was marked at 85%. Considering the aggressive disease nature, single-agent carboplatin was started, but the patient could not tolerate this therapy, and he was followed up with supportive treatment. He was prescribed fentanyl transdermal system 75 mcg/h and alprazolam 1 mg by the algology clinic for pain palliation. The patient died two months after diagnosis.

Discussion

We presented a case of advanced and quickly progressive SCCP. As deducted from this specific case, initiation of treatment is time sensitive as a low PSA level can be misleading about the aggressive nature of this disease. Clinicians should keep in mind that early diagnosis of this disease is challenging due to the early metastatic spread of small cell carcinoma and lack of concordant elevation of PSA. SCCPs do not usually benefit from androgen deprivation treatment and disease progression is not associated with rises in serum PSA levels [1]. SCCP is a rare and aggressive type of prostate cancer. It constitutes less than 1% of all prostatic neoplasms and the mean age is 65.9 [2]. Approximately 40 to 50% of small cell carcinomas have a history of prostatic

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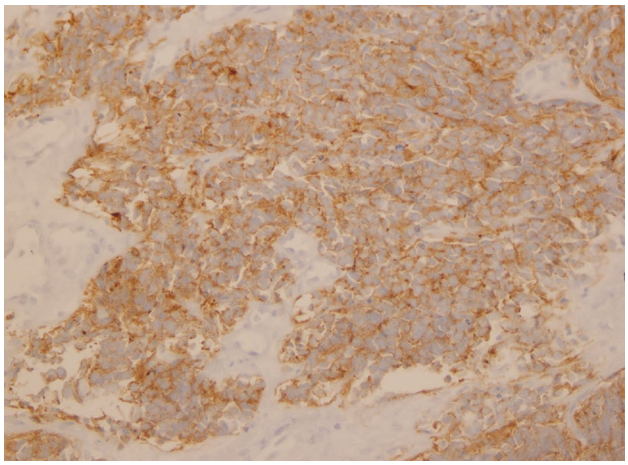


Fig. 1 Cytoplasmic synaptophysin positivity in prostate small cell carcinoma

adenocarcinoma. The amount of neuroendocrine differentiation of prostate adenocarcinoma increases with disease progression and in response to anti-androgen therapy [3]. It has a median survival rate of 1–2 years from diagnosis. SCCP develops from neuroendocrine cells of the prostate. These cells do not secrete prostate-specific antigen (PSA), so the PSA level can be normal. This fact has been confirmed by many cases [4]. PSMA-PET is used for staging prostate adenocarcinoma, but FDG-PET-CT may be useful because small cell prostate cancer tends to be metabolically active [5].

Obstructive symptoms of the inferior urinary tract are the most common presenting symptoms, but the patient did not present urinary symptoms in our case. We describe a rare occurrence of small cell carcinoma presenting as a paraneoplastic syndrome. The initial diagnostic part of the case was uniquely challenging. It may also cause symptoms of paraneoplastic syndrome, such as muscle cramps, confusion, and sensory or motor polyneuropathy.

Treatment strategies are combinations of surgery, chemotherapy, and radiation therapy represent the main treatment options.

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Declarations

Conflict of interest The authors have no conflicts of interest to declare that are relevant to the content of this manuscript.

Informed consent The patient provided informed consent for publication of this case report.

Human and animal rights It is declared that scientific, ethical principles and human rights have been followed while carrying out this article.

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