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LETTER TO THE EDITOR

Spermatocytic Seminoma with Brain Metastasis

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Spermatocytic seminoma is a rare variant of testicular cancer. Patients with spermatocytic seminoma, who are commonly over 50 years of age at diagnosis, have clinicopathologic characteristics that are distinct from other testicular cancer patients. These patients typically present with a painless, palpable, slowly enlarging testicular mass without associated cryptorchidism. [1] Spermatocytic seminoma almost never shows metastatic spread unless complicated by sarcomatous transformation, and most patients who undergo orchiectomy require no further treatment. [2] In this report, we describe, to our knowledge, the first reported case of a spermatocytic seminoma with brain metastasis.

A 77-year-old man presented with painless left scrotal swelling. He first noticed the swelling 6 years prior to presentation, and the swelling had been growing slowly. Physical examination revealed a non-tender, firm, and enlarged left testicular mass. Tumor markers, including alpha-fetoprotein and beta-human chorionic gonadotropin, were negative. Scrotal ultrasound and subsequent magnetic-resonance imaging revealed an enlarged left testis and epididymis with an infiltrative intratesticular mass displaying heterogeneous enhancement and diffusion restriction. Computed tomography of the abdomen, pelvis, and chest revealed no significant lymphadenopathy. We planned a left radical orchiectomy. The patient showed intermittent disorientation during his admission. After neurologic consultation, brain magnetic-resonance imaging was performed, which revealed multiple various solid lesions, with peritumoral edema, located in the left parietal lobe, right basal ganglia, and right cerebellum (Fig. 1). These findings were indicative of multiple brain metastases. There was no suspicious primary malignant lesion found in evaluating the patient other than the testicular cancer. As an initial procedure, the patient underwent a left radical orchiectomy as planned. Pathologic examination of the surgical specimen revealed spermatocytic seminoma with no sarcomatous transformation. Microscopically, it has been observed in a variety of cell morphology (nucleus-sized variation) from small lymphoid-like cells, medium-sized cells to large cells. The tumor involved the rete testis and epididymis without lymphovascular invasion, and it invaded into the tunica albuginea but not the tunica vaginalis. The patient was determined to have stage IIIc spermatocytic seminoma. The brain metastases were treated with external beam radiotherapy. The patient was reluctant to, and did not receive, chemotherapy, mainly due to his poor performance status. Nevertheless, the patient's performance status had declined as of the last follow up.

Spermatocytic seminoma is a rare variant of seminoma that behaves differently from other testicular cancers. In a previous population based study, the incidence of spermatocytic seminoma was 0.4 per million with a mean age at diagnosis of 53.5 years, representing 0.61 % of all testicular germ cell tumors and 1.1 % of entire seminoma. [1] Serum tumor markers are always negative in patients with spermatocytic seminoma, and there is no association with preexisting cryptorchidism or intraepithelial neoplasia. [3] Spermatocytic seminoma is typically an indolent neoplasm which has a less malignant biological behavior than other germ cell tumors. [2]

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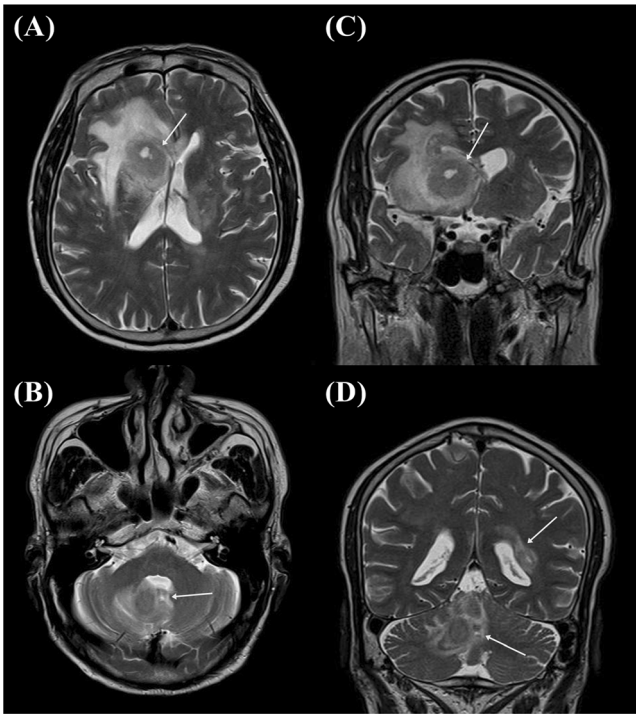

Fig. 1 Axial (**a**, **b**) and coronal (**c**, **d**) T2-weighted brain magnetic-resonance imaging showing multiple solid lesions with peritumoral edema in the left parietal lobe, right basal ganglia, and right cerebellum (arrowed)

The long duration of symptoms compared with classical seminoma supports these characteristics of spermatocytic seminoma. Similarly, this patient's painless scrotal swelling persisted for at least 6 years.

Metastasis of spermatocytic seminoma is extremely rare, so orchiectomy and surveillance are usually sufficient therapeutic management. [2] The very small subset of patients who do develop metastatic disease often have a variant of spermatocytic seminoma with sarcomatous transformation. [4] These patients are characterized by aggressive behavior and poor prognosis. [2] The metastatic disease usually involves the retroperitoneal lymph nodes, lungs, liver, or bones. It is highly resistant to cytotoxic chemotherapy, with a median survival of only 5 months after diagnosis. [5] In our case, clinical and pathological evaluation revealed spermatocytic seminoma with brain metastasis, which has not been reported previously as a metastatic location in spermatocytic seminoma. Furthermore, the pathologic evaluation of this patient's surgical specimen revealed no sarcomatous transformation, which usually is associated with poor prognosis and metastatic disease.

To our knowledge, brain metastasis in spermatocytic seminoma with or without sarcomatous transformation has never been reported. Furthermore, in our case, sarcomatous transformation was not observed in the surgical specimen, and metastatic lesions were found only in the brain. This case is extremely rare and unusual because metastatic testicular cancer most frequently involves the retroperitoneal lymph nodes.

Our case demonstrates that not all spermatocytic seminomas represent indolent neoplasms, even when no sarcomatous transformation is observed, and spermatocytic seminomas can metastasize to the brain. Therefore, regardless of sarcomatous transformation, clinicians should be mindful of the rare but possible risk of metastasis when evaluating and managing patients with spermatocytic seminomas.

Compliance with Ethical Standards

Conflict of Interest None.

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