



**Case Report**

**Volume 4, Issue 11 -2018**

**DOI: <http://dx.doi.org/10.22192/ijcrms.2018.04.11.005>**

**"Dural Metastasis" in Advanced Prostate Cancer:  
A Case Report with a Short Compilation**

**Selçuk Ergen, MD**

Department of Medical Oncology, Balıkesir Ataturk City Hospital, Balıkesir, Turkey

Phone : +90-266-4603426

E-mail: [dr.selcukergn@hotmail.com](mailto:dr.selcukergn@hotmail.com)

**Abstract**

Prostate cancer is the most common malignancy in men and metastasizes most often to the pelvic lymph nodes and the skeletal system. Intracranial metastasis is rare in the prostate cancer and involves mostly dura mater, which is confirmed with autopsies. The presence of an intracranial metastasis indicates to a poor prognosis. As the current treatment modalities in the advanced prostate cancer increased the survival, dural metastasis was encountered more frequently. Hereby we report a patient, who was followed up due to the metastatic prostate cancer, in whom we determined a dural metastasis after an epileptic seizure.

**Keywords:** Prostat cancer, Dura mater, Metastasis.

**Introduction**

Prostate cancers are the most common cancer in men and approximately half of the patients have metastases to the pelvic lymph nodes and axial bones. Intracranial metastases are rare in the prostate cancer, but if it occurs, it mostly involves dura mater. In the literature, the first report about a case with the subdural metastasis related to the prostate adenocarcinoma was published in 1981. (1) Dural metastases related to the prostate cancer were also reported in the autopsy series (2,3,4). Starting from 2004, it was determined that docetaxel-based chemotherapies contributed to the overall survival in patients with metastatic castration-resistant prostate cancer (5). The usage of these agents prolonged the survival rate and new hypotheses related to the increase of the rare

metastatic sites with the prolonged survival were introduced (6).

**Case Report**

A 65-year-old male patient applied to the emergency department due to an epileptic seizure. The patient was under follow-up in our clinic because of castration-resistant prostate adenocarcinoma (he had multiple bone and intraabdominal lymph node metastases). He was still under the chemotherapy with cabazitaxel (one intravenous administration in every 21 days) and zoledronic acid (one intravenous administration in every 28 days) treatment. The second course was administered just 15 days ago.

Gleason score was 8 (4 +4) and the last total prostate-specific antigen (PSA) level was 300 ng/mL. As the patient had no known neurological disorder and the blood examination carried out in the emergency department was normal, a contrast-enhanced cranial magnetic resonance (MR) imaging was scheduled. MRI examination displayed a dural thickening with a pathological contrast agent uptake and a lesion in the left parietal area, which formed a wide base with the

dura mater (Figure 1). The patient was examined in the neurology department and was hospitalized for the supportive treatment in the intensive care unit. A treatment with an intravenous steroid and an anticonvulsant agent was initiated. As the epileptic seizures came under control on the 3rd day of the treatment, the patient was referred to the department of radiation oncology for consultation regarding the radiotherapy options.

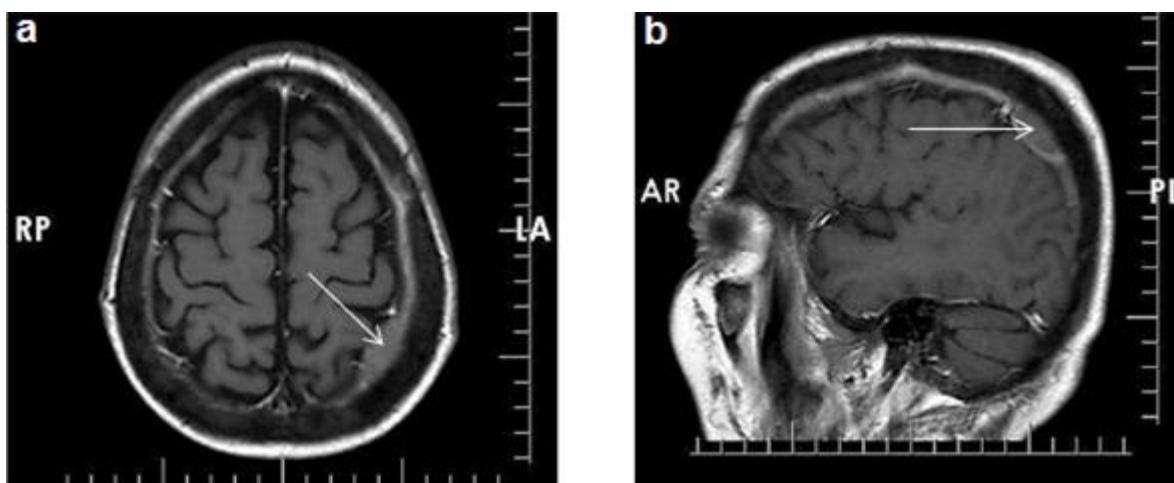


Figure 1: Mass lesion in the left parietal region, which formed a wide base with the dura mater and had a dural thickening with a contrast agent uptake in the post-contrast T1A axial and sagittal MRI respectively. The white arrows indicate dural thickening (a) and (b).

## Discussion

The neurological metastases of the prostate cancer involve usually spinal vertebrae and intracranial metastases causing clinical symptoms are rare and become manifest in the late stages of the disease. In a study conducted in the cancer center, only 28 (0.04 %) of the 6282 metastatic prostate cancer patients had dural metastasis (4). Autopsy reports of the patients with prostate cancer revealed dural metastasis in only 19.5% of the cases (7).

Dural metastasis may also emerge in many other neoplasms. Regarding the male patients, it is more common in breast, prostate and lung carcinoma. (7,8). The prognosis of dural metastases related to solid tumors is relatively poor. In a retrospective study conducted in a cancer center on 122 patients with intracranial dural metastases showed that 34% of the patients had breast cancer and 17% had prostate cancer (9). In another study, in which

198 patients with dural metastases were investigated, 19.5% of patients had prostate cancer, 16.5% breast cancer and 7.5% had gastric cancer (10).

Several mechanisms were proposed for the intracranial propagation of the prostate cancer. According to the Batson's theory, the tumor cells flow backward to the cranium through the venous plexus (hematogenous) and are inoculated in that area (11). The multiple-step-and-stage theory proposes that the metastasis occurs first in the bones and afterward involves the dura mater (12). Direct infiltration originating from the cranial bones is the most common type and it also explains why prostate cancer is more common in dural metastasis. It was reported in the literature that in 57% of the 198 patients with dural metastasis the origin was cranial bones and in 43% the metastasis occurred through the hematogenous path (10). As in our case there was

no metastasis to the cranial bones, we concluded that the dural metastasis had developed through the hematogenous path as described in the Batson's theory.

Clinical symptoms such as headache, fecal incontinence, papilla edema, ataxia, epileptic seizure, dizziness, paralysis in the cranial nerves and mental disorientation may emerge in patients (13).

The optimal treatment of the dural metastasis is still not clear. The aim of the treatment is the control of the neurological findings and prevention of the progress before the neurological deficit develops. High dose dexamethasone may reduce the symptoms caused by the cerebral edema (14). Stereotactic radiosurgery alone and combined with the radiotherapy may be a treatment option (15). Anticonvulsant agents may be helpful to control the epileptic seizures. However, in spite of all treatment alternatives, dural metastases have a poor prognosis and the mean survival rate is 3-4 months (9).

## Conclusion

Autopsy studies showed that the cerebral metastases of the prostate cancer involve most frequently the dura mater. This finding indicates that the dural metastases are much more common than expected in the living patients with metastatic prostate cancer, but as they become not enough big to cause clinical symptoms, clinical manifestations are usually not encountered. Neurological symptoms in patients with metastatic prostate cancer should be investigated and if necessary, a radiological imaging and a multidisciplinary evaluation should be planned. Early diagnosis and appropriate treatment may relieve the symptoms and increase the quality of life of the patients.

## References

1. Penley MW, Kim YC, Pribram HF: Subdural metastases from prostatic adenocarcinoma. *Surg Neurol* 1981;16:131–134.
2. Demierre B, Berney J. Intracranial metastases of cancer of the prostate. *Neurochirurgie* 1983;29:143–149.
3. Kleinschmidt-DeMasters BK: Dural metastases. A retrospective surgical and autopsy series. *Arch Pathol Lab Med* 2001;125:880–887.
4. Tremont-Lukats IW, Bobustuc G, Lagos GK, Lolas K, Kyritsis AP, Puduvali VK: Brain metastasis from prostate carcinoma: The M.D. Anderson Cancer Center Experience. *Cancer* 2003;98:363–368.
5. Tannock IF, de Wit R, Berry WR, et al. Docetaxel plus prednisone or mitoxantrone plus prednisone for advanced prostate cancer. *N Engl J Med* 2004;351:1502–12.
6. Lawton A, Sudakoff G, Dezelan LC, Davis N. Presentation, treatment, and outcomes of dural metastases in men with metastatic castrate-resistant prostate cancer: A case series. *J Palliat Med.* 2010;13:1125–9.
7. Bubendorf L, Schopfer A, Wagner U, Sauter G, Moch H, Willi N, Gasser TC, Mihatsch MJ. Metastatic patterns of prostate cancer: an autopsy study of 1,589 patients. *Hum Pathol.* 2000;31:578–583.
8. Wasserstrom WR. Glass JP. Posner JB. Diagnosis and treatment of leptomeningeal metastases from solid tumor: Experience of 90 patients. *Cancer.* 1982;49:759–772
9. Nayak L, Abrey LE, Iwamoto FM. Intracranial dural metastases. *Cancer.* 2009;115:1947–1953.
10. Laigle-Donadey F, Taillibert S, Mokhtari K, Hildebrand J, Delattre J Y. Dural metastases. *J Neurooncol.* 2005;75(1):57–61.
11. Batson OV: The function of the vertebral veins and their role in the spread of metastases. 1940. *Clin Orthop Relat Res* 1995;312:4–9.
12. Saitoh H, Hida M, Shimbo T, Nakamura K, Yamagata J, Satoh T: Metastatic patterns of prostate cancer. Correlation between sites and number of organs involved. *Cancer* 1984 ;54 : 3078–3084.
13. De Vasconcelos Sobreira Guedes B, da Rocha AJ, Gama HP, da Silva CJ. Dural metastases from prostate carcinoma: a systematic review of the literature apropos of six patients. *Eur J Radiol.* 2011;80:236–240.

14. Bentley AM, Keen JC. Dural metastases in prostate cancer. Clin Oncol (R Coll Radiol ) 2003;15:165–166.
15. Patil CG, Pricola K, Sarmiento JM, Garg SK, Bryant A, Black KL. Whole brain radiation therapy (WBRT) alone versus WBRT and radiosurgery for the treatment of brain metastases. Cochrane Database Syst Rev. 2012;9:CD006121.

Access this Article in Online	
	Website: <a href="http://www.ijcrims.com">www.ijcrims.com</a>
	Subject: <a href="#">Medical Sciences</a>
Quick Response Code	

[How to cite this article:](#)

Selçuk Ergen. (2018). "Dural Metastasis" in Advanced Prostate Cancer: A Case Report with a Short Compilation. Int. J. Curr. Res. Med. Sci. 4(11): 36-39.

DOI: <http://dx.doi.org/10.22192/ijcrms.2018.04.11.005>