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Case Report / Olgu Sunumu

Sphenoid wing metastasis of prostate cancer: a rare case

Prostat kanserinin sfenoid kemik metastazı: nadir bir olgu

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Özet

Prostat kanserinin sfenoid kanat metastazı son derece nadir bir durum olup özellikle ilk başvuru anında beklenen bir bulgu değildir. Kafa tabanı kemiklerine olan metastazların gösterilmesi güç bir durumdur. Bu durum bazen nörolojik ve görme ile ilgili problemlere sebep olabildiği için klinisyen tarafından kolaylıkla atlanabilir. Prostat karsinomunun nörolojk veya görme ile ilgili semptomlara eşlik ettiği durumlarda intrakranial metastaz olabileceği hatırlanarak gerekli görüntülemeler yapılmalıdır. İntrakranial metastaza bağlı semptomu olan hastalara palyatif radyoterapi uygulanabilmesine rağmen hastalığın prognozu çoğunlukla kötüdür. Biz bu yazımızda sfenoid kanat metastazı tespit edilen 75 yaşındaki prostat kanserli olguyu literatürü de gözden geçirerek tartıştık.

Anahtar Kelimeler: prostat kanseri, sfenoid kemik, metastaz

Abstract

A sphenoid metastasis of prostate cancer is an extremely rare entity and it is not an expected finding especially in the first presentation. It is difficult to demonstrate the metastasis on skull base. Sometimes, it may cause neurological and vision problems, and can be easily omitted by clinician. When prostate carcinoma is accompanied by neurological and vision problems, one should keep in mind that these may be related to intracranial metastasis, and should perform necessary imaging studies. Patients with symptoms related to intracranial metastasis can take receive palliative radiotherapy but prognosis is generally poor. In this report, we discussed a 75 years-old patient with prostate cancer and sphenoid metastasis under the light of current literature.

Keywords: prostate cancer, sphenoid bone, metastasis

INTRODUCTION

Although the prostate cancer was reported to have been metastases most frequently to the bones, it is well known that the sphenoid metastasis is extremely rare. Lindsberg et al. had previously reported a case of bilateral sphenoid wing metastasis (1). Although metastasis to the skull base can be seen as the first finding of prostate cancer, it usually manifests itself late in the course of the disease (2). The syndromes described as regards the metastatic site include the orbital, parasellar, middle-fossa, jugular foramen, and occipital coldly syndrome. Computed tomography (CT) and bone scintigraphy are helpful to demonstrate bone erosion. However, Magnetic Resonance Imaging (MRI) is more useful examination method for diagnosis. Radiotherapy is the standard treatment method. However, hormone-sensitive or chemosensitive patients can benefit from hormone therapy or chemotherapy. Lesions can be surgically removed in selected patients (3). In this article we discussed a 75 years old patient with sphenoid wing metastasis of prostate cancer.

CASE REPORT

A 75 years old male patient applied to our outpatient clinic with the complaint of voiding difficulty lasting for three months duration. In his anamnesis internal urethrotomy operation had been performed due to urethral stricture six months ago. In addition, the Prostate Spesific Antigen (PSA) value was found to be 20 ng/ml and 12 core prostate biopsies were reported as benign. Physical examination was normal except for swelling and strabismus in the left eye. The prostate gland was palpated as endured and diffuse hard on digital rectal examination. PSA value were found to be as 98 ng/ml. Thereupon, 12 core prostate biopsy was performed again under transrectal ultrasound (TRUS) guidance. The result of histopathological examination was reported as prostatic adenocarcinoma Gleason 4+4. In the whole body bone scintigraphy, an image compatible with metastasis was seen in the ala major region of the sphenoid bone and at the base of the left orbit. A cranial, orbit and paranasal region CT revealed a mass lesion involving ala majora of the left sphenoid bone (Figure 1). Thereupon, antiandrogen (bicalutamide 50 mg) and bisphosphonate treatments have started and the patient underwent bilateral orchiectomy procedure with simultaneously transurethral resection of prostate (TUR-P) procedure to relieve the lower urinary tract symptoms. During cystoscopy, it was observed that the left ureteral orifice was occupied by tumoral prostate tissue. Histopathological evaluation of TUR-P material was reported as acinar type prostate adenocarcinoma Gleason 4+5 (Figure 2). The PSA value of the patient, measured after three months, was found to be 9.2 ng/ml. At the third month, control CT was performed to reevaluate the status of the lesion in the sphenoid bone. Comparison of the control cranial tomography with the first images revealed that there was no significant change in the lesion. The patient was consulted radiation oncology and radiotherapy was considered for metastasis in the sphenoid wing. However, the patient died 4 months after the initial diagnosis due to intervening pulmonary infections and poor general condition. The patient and his relatives signed an informed consent agreement.

DISCUSSION

Prostate cancer metastases most commonly affect bone tissue. In addition, visceral organs such as the lung, liver and adrenal gland, as well as tertiary lymph nodes in the mediastinal and supraclavicular regions may be involved. (4). The intracranial metastasis of prostate carcinoma is a relatively rare entity. In antemortem studies the rate of intracranial metastasis due to a prostate carcinoma has been reported to be 0.1-0.2% (5). In large autopsy series a 1.3% to 2% rate of intracranial metastasis due to prostate adenocarcinoma has been reported (6).

Patients with intracranial metastasis of prostate cancer generally present with neurologic symptoms and this situation can be overlooked by many clinicians. The sphenoid bone metastasis of prostate cancer is an extremely rare occurrence (1). It may be difficult to identify metastatic lesions to the ethmoid, sphenoid, and sometimes frontal, temporal, and occipital bones with current imaging methods. Even in autopsies it might be hard to demonstrate these lesions (7). It should be kept in mind that intraocular metastasis can develop due to prostate carcinoma in patients with

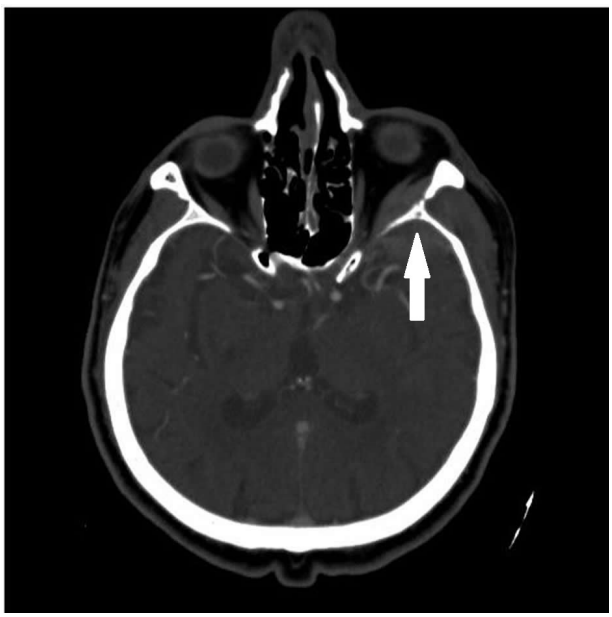

Figure 1: Brain CT; Sphenoid wing metastasis of prostate carcinoma (white arrow)

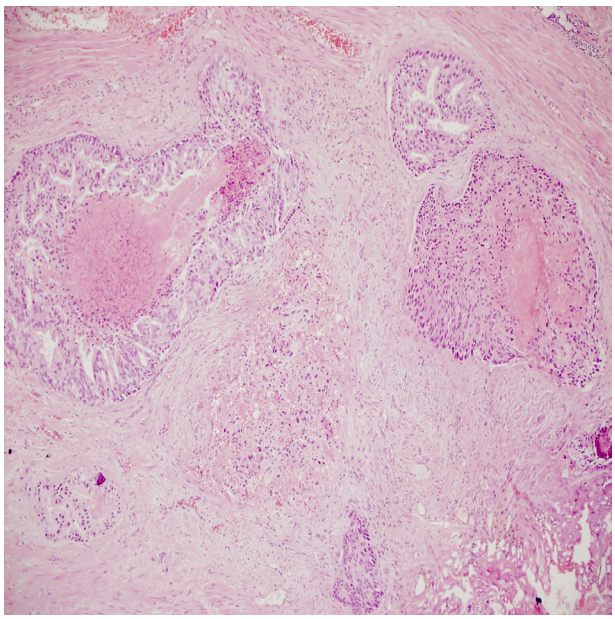

Figure 2: Adenocarcinoma areas in which Gleason score is 4+5 in TUR-prostatectomy material.

eye problems. Orbital and ocular metastases associated with prostate cancer have also been reported (8, 9).

Clinical staging of prostate cancer is done with the AJCC (American Joint Committee on Cancer) TNM (tumor-node-metastasis) system. Digital rectal examination, PSA measurement, and TRUS-guided prostate biopsy can be used in the diagnosis, localization, and staging of prostate cancer. Multiparametric MRI makes an important contribution in this staging. (10). Methods such as CT, MRI or lymph node sampling can be used to evaluate lymph node involvement. MRI has no significant superiority over CT in demonstrating lymph node involvement (11). Imaging methods such as thoracoabdominal CT, MRI and Tc-99m methylene diphosphonate (MDP) can be used for metastasis evaluation. MRI is more sensitive than CT and bone scintigraphy in detecting small bone metastases (12). Ga-68 PSMA PET/CT is an imaging method that has found more use in recent years. It is used in the evaluation and treatment planning of patients with biochemical recurrence after primary curative treatments, and in the detection of metastatic disease in the initial staging of high-risk prostate cancer (13, 14). It can also be used in patient selection before PSMA-based theranostic (therapeutic+diagnostic) applications (15).

CT can be used to show lytic bone lesions in the diagnosis of skull base metastasis. However, MR imaging is more superior in the diagnosis of accompanying dural invasion and brain metastasis. Radionuclide bone scan has a relatively weaker sensitivity in the diagnosis of lytic bone lesions. Remodeling of the one is needed for this technique to be useful. Although bone scintigraphy is negative, MR imaging can give positive results (16).

The skull base metastasis of the prostate cancer can be via direct invasion, lymphatic spread and/or vascular embolization. Prostate cancer is a tumor sensitive to radiotherapy, chemotherapy, and hormone therapy. In the treatment of the metastasis to the skull base of the primary prostate cancer, conventional fractional radiation therapy is the standard treatment as well as radio surgery and stereotactic radiation technique. Moreover, chemotherapy can be used in cases where unsuccessful maximal androgen blocking hormone therapy in prostate carcinoma with bone metastasis. In skull base tumors, surgical treatment is limited with selected cases. It should be kept in mind that long term use of bisphosphonate for palliative treatment in patients with painful bone metastasis can cause mandibular bone necrosis (16).

The prognosis of patients with skull base metastasis is not good and average life expectancy is less than 1 year. The survival rates in patients with cranial nerve paralysis have been reported to be less than 5 months (17). Our patient died 4 months after the first diagnosis, which is consistent with the literature. Clinicians should be vigilant to recognize skull base metastasis of prostate carcinoma. An intracranial metastasis should be suspected and the necessary imaging studies performed especially when neurologic signs and sights problems are accompanied by prostate cancer.

Conflict of Interest

All authors declared that there is no conflict of interest.

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Author Contributions

Conception and design; FA, Data acquisition; FA, Data analysis and interpretation; FA, Drafting the manuscript; FA, Critical revision of the manuscript for scientific and factual content; FA, Statistical Analysis; FA, Supervision; FA.

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