CASE REPORT

Recieved: November 2014
Accepted: December 2014

Metastasis of Prostate Adenocarcinoma to the Orbit: A case report

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ABSTRACT

Prostate cancer is the second most common malignancy after skin cancer, and second leading cause of cancer death in western countries. However its incidence and mortality is lower among Iranian population. At the time of diagnosis, about %30 of patient have regional or distant metastasis. Orbital metastasis is uncommon in adult and represents only %9-2 of orbital tumors. We present a case of prostate adenocarcinoma with metastasis to the left orbital cavity from the Cancer Institute of Iran. The patient was a -62years old man, with known adenocarcinoma of prostate from 2011 was referred to the Cancer Institute of Iran in March 2013. He was suffering from progressive left eye vision loss, proptosis, a growing mass in the left orbit, diplopia, headache, and generalized bone pain.Core needle biopsy from the mass revealed moderately differentiated adenocarcinoma. The patient was discussed at the tumor board on March 2013. The board recommended palliative radiation to the orbit, effective pain control regimen, and other necessary measures. Due to poor general condition, orbital radiotherapy was not possible, but he received other palliative measures. The disease was progressed and patients passed away within 2 months. Orbital metastasis of prostate cancer is very rare. Prognosis is usually poor and the treatment depends on the level of extension and general condition of the patients.

Key words: Prostate Cancer, Orbital metastasis, Cancer in Iran

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BCCR
2015;7(1):50-53
www.bccrjournal.com

Introduction

Prostate cancer, the most common malignancy after skin cancer, and second leading cause of cancer death in western countries[1,2], is much lower within Iranian population[3]. At the time of diagnosis, about 30% of patient have regional or distant (mostly in pelvic and vertebrae bones) metastasis[4]. Orbital metastasis is uncommon in adult and represents only 2-9% of orbital tumors[4]. Occulo-orbital metastases of prostate cancer are extremely rare[5].We present a case of prostate adenocarcinoma with metastasis to the left orbital cavity.

Case report

A 62-years old man, with known adenocarcinoma of prostate from 2011, was refered to Cancer Institute in March 2013 with progressive left eye vision loss, proptosis and growing mass in the left orbit. Patient also complained of diplopia, headache and generalized bone pain.

The patient had a history of prostate cancer from 2011, with bone metastasis to the fifth and nineth thoracic vertebrae and scapula (Fig. 1). The disease was suspected by rising PSA level and confirmed by needle biopsy of prostate gland, which showed adenocarcinoma with perineural invasion (Fig 2). Bilateral orchidectomy and radiotherapy of involved bone area followed by hormon therapy resulted to good palliation, before recent presentation.

Physical examination demonstrated left exophtalmus, lateral rectus palsy, fullnes and firmness of left orbit to palpation. Visual acuity was severely decreased. On systemic evaluation, he was cachectic with normal vital signs, and had sensitivity and pain rising over thoraco-lumbar vertebra. On digital rectal examination prostatic tissue was firm and nodular. Otherwise physical examination was normal.

On contrast-enhanced MRI, advanced extraglobal,

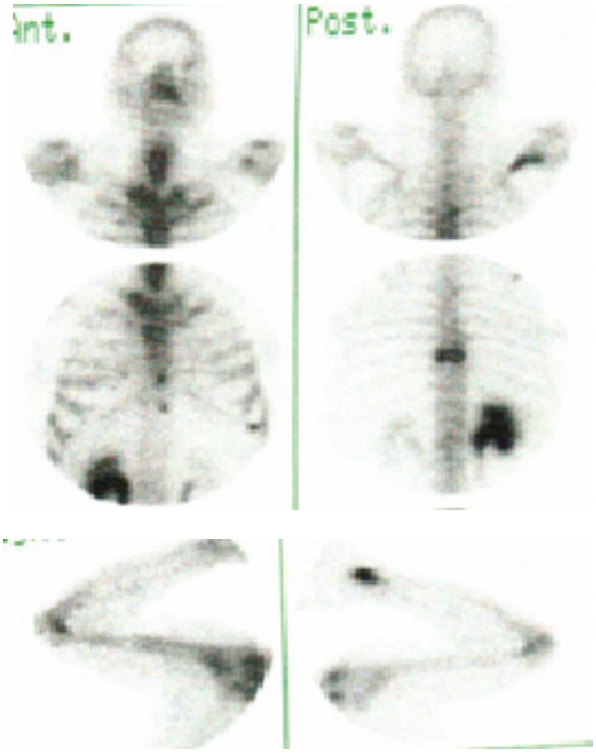

Figure 1. Radio-isotope scan revealing T5, T9 and right scapular metastases

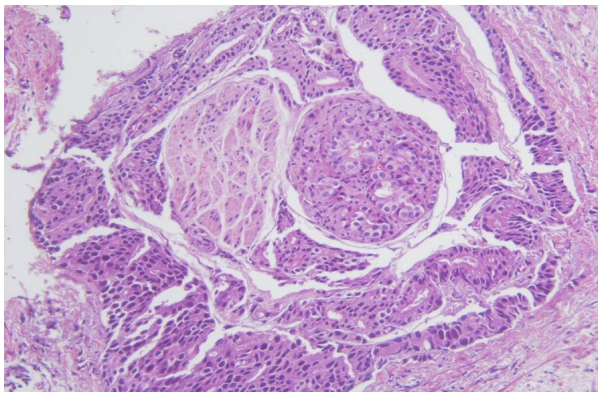

Figure. 2. Prostatiac adenocarcinoma with Perineural invasion (H & E 10 × 40)

intraorbital soft tissue density involving rectus and superior orbital muscles and optic nerve and extending to dura and frontal lobe of brain was seen (Fig 3). The bony orbit was normal.

Core needle biopsy from the mass revealed moderately differenciated adenocarcinoma (Fig. 4). Immunohistochemical staining revealed AR positive and PSA positive (Fig. 5). Based on major and some minor histopathologic criteria, metastatic adenocarcinoma from prostate origin, established[6].

The case war discussed at cancer institutes tumor board on March 2013. Board recommended palliative radiation to the orbit, effective pain control regimen, and other necessary measures. Due to poor general condition, orbital radiotherapy was not possible, but other palliative measures continued. The disease progressed and he passed away 2 months later.

Discussion

The prostate cancer in Iran is NOT commom and considers very low as compared to the Western countries[3]. Its presentation is late and about 30% of patients suffer regional or distant metastasis at the time of diagnosis[4]. The spread occurs by direct local invasion, perineural invasion, or via lymphatic system and bloodstream. Hematogenous bone metastasis is by far the most common form of distant spread, mostly involving the lumbar spine, ribs and pelvic bones[7] and rarely skull base and orbit[8]. Visceral metastasis occurs in pelvic lymph nodes, liver and lungs. Most orbital neoplasms are primary and originate from orbit tissues itself. Secondary lesions either extend to the orbit from neighboring structures or metastatic from distant primaries[9]. In adults, Breast cancer, lung and prostate cancers are the most common primary tumors which metastasize to orbit, followed by melanoma and gastrointestinal malignancies[9]. Metastasis from these primary sites consists

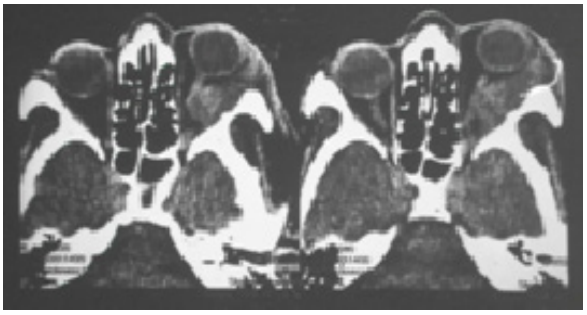

Figure 3: magnetic resonance imaging shows tumoral mass at left retro-orbital region

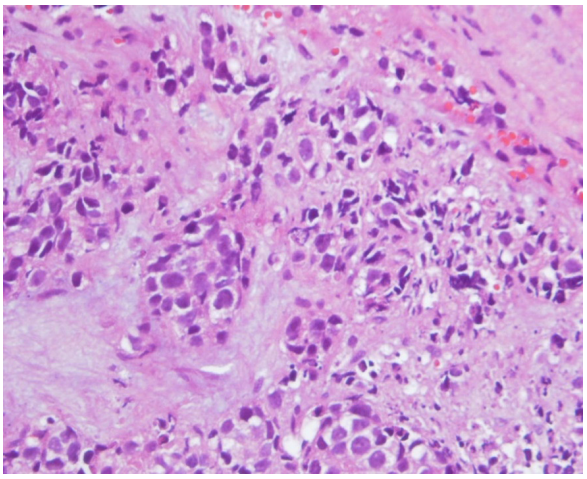

Figure 4: Small solid tumor islands(H&E 10×40). Biopsy of orbital tumor

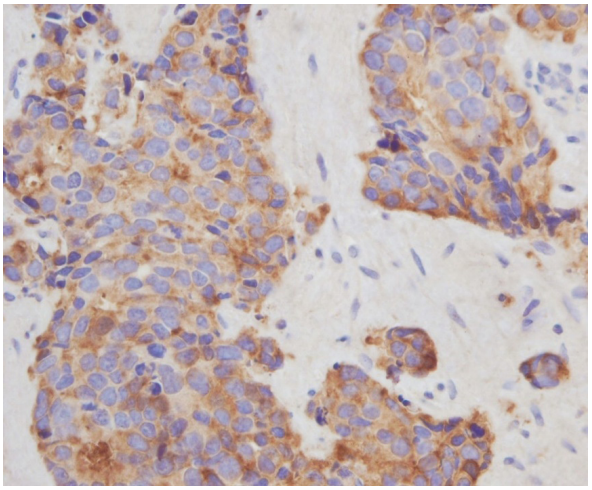

Figure 5: Biopsy of orbital tumor. Small solid tumor islands shows positive for PSA (An immunostaining 10 ×10)

of osteolitic lesions or soft tissue masses. Although metastasis from prostate to the orbit is rare, the lesions are frequently osteoblastic in nature[10]. In Advanced cases and terminal phases of disease, Osteolytic and mixed osteoblastic-osteolytic lesions are also seen[10]. Metastasis to soft tissue of orbit is very rare.

In presented case soft tissue of the orbit was involved. Clinical history, MRI of the orbits, along with core needle biopsy was used to make definite diagnosis.

Unusual metastases of prostate cancer are usally associated with advanced and disseminated disease [11]. In this case skeletal metastases occurred before orbital involvement.

The management of orbital metastasis from prostate adenocarcinoma is difficult and depends on the systemic as well as ocular status at resentation. This case was discussed in Cancer Institute tumor board. Due to high degree of systemic involvement and poor patient condition, only palliative measures recommended. The patient died of advanced cancer 2 months later.

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