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Oncology

Fronto-orbital metastasis of a prostatic adenocarcinoma

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ABSTRACT

Prostate cancer often spreads to bony sites, but other metastatic sites are exceptional. Brain localization accounts for less than 4% of postmortem cases.The cerebral metastases of a prostatic ADK are rare, the prognosis is unfortunate and the treatment is based on androgen deprivation and radiotherapy. We describe a case of orbital metastasis of prostatic adenocarcinoma and we highlight the diagnostic and therapeutic singularity of this affection.

Background

Prostate cancer is the second most common cause of cancer death in men after lung cancer and the most common in men after the age of 50.[1] We report the exceptional case of a frontal brain, for which the patient was operated on and for which the immunohistochemical study of the surgical specimen was in favor of prostate adenocarcinoma.

Case presentation

68-year-old patient followed for hypertension for 6 years on calcium channel blocker and chronic smoking.

The patient reported symptomatology evolving over the past 6 months consisting of morning headache, vomiting, and decreased visual acuity associated with Lombosciatalgia, diffuse bone pain, and pollakiuria.

Clinical examination finds a patient in good general condition, PS: 2, apyretic, with the presence of a right exophthalmos. The Rectal examination found a hard prostate in its entirety, with a soft bladder base. The rest of the clinical examination is normal.

The patient benefited from a cerebral CT scan objecting to a frontal process. The patient's biology showed normal renal function and a PSA level of 495ng/ml. Prostate biopsy revealed a Gleason 9 (4 + 5) prostatic adenocarcinoma, spine radiology had shown diffuse vertebral bone demineralization confirmed by lumbar MRI which found a double dorsal T12 and sacral S2, S3 lesion with sacral intra-channel extension (Fig. 1).

Bone scintigraphy showed several interesting areas of hyperfixation of different intensity and extent: the skull, face, cervical, dorsal, lumbar and sacral spine, femur, and sternum (Fig. 2).

A cranio-orbital MRI showed a right sphenoidal process with hypo-signal T1 at the postero-external wall of the orbit responsible for an exophthalmos. This process exerts a mass effect with compression and repression of the external orbital muscle and the optic nerve. The lesion measures 32/24 mm axially and 49/32 mm sagittally. This aspect was in favor of right spheno-orbital plate brain metastases responsible for exophthalmos (Fig. 3).

After The Multidisciplinary Concertation Meetings (MCM) and discussion with the patient, it was decided to start a hormonal treatment composed of a complete androgen blocking, associating a GnRH analog, and a non-steroidal anti-androgen as well as first line chemotherapy combined with analgesic radiotherapy for bone metastasis.

The evolution was marked by a drop in the PSA level to 65 ng/ml after one year and 3 months. Five months later, the patient's follow-up was marked by his death.

Discussion

The secondary cerebral localization of prostatic adenocarcinoma is exceptional, while the lymph node and bone involvement remains the most common.

Cerebral metastases are secondary to either hematogenous dissemination or contiguity of a bony location of the skull.[1] In the CHUNG et al. series, cerebral metastases of prostate ADK represent only 0.6% of cases. Usually, these metastases are only discovered postmortem.[2]

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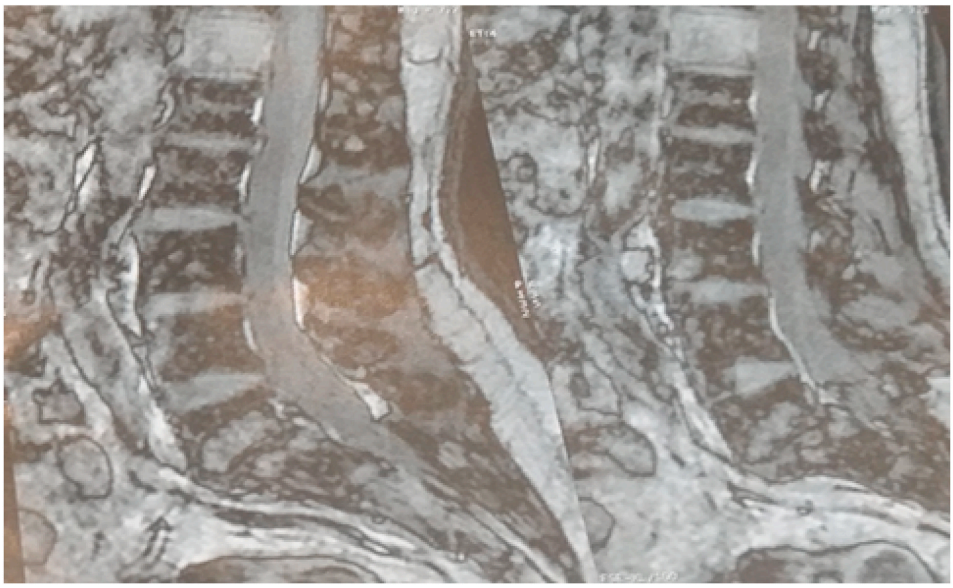

Fig. 1. Dorso-lumbar MRI objectifying the two lesions.

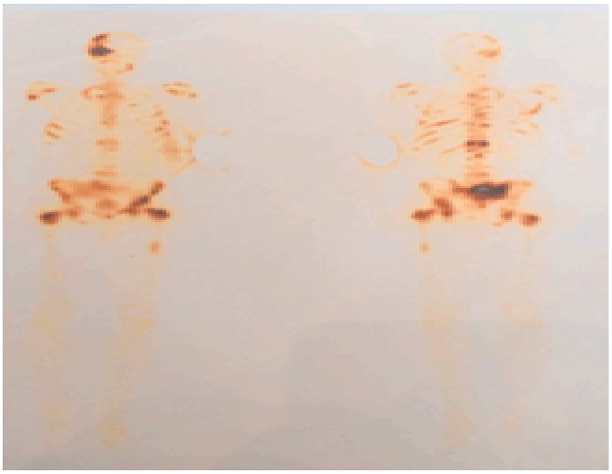

Fig. 2. Bone scan showing metastatic locations.

In our patient, the cerebral localization would be secondary to the metastasis localized in the skull found on bone scan and brain MRI.

The clinical symptomatology is variable depending on the intra-parenchymal location and may manifest itself as agitation, confusion, decreased visual acuity, jet vomiting, and headaches grouped in the intracranial hypertension syndrome, which was found in our patient.

MRI is the main paraclinical examination to look for metastatic brain localization, while stereotactic biopsy allows us to have a histological confirmation. In our case, the patient was operated for a meningioma and an immunohistochemical study was completed which was in favor of a cerebral metastasis of a prostatic ADK.[3]

Management is based on corticosteroids and diuretics to treat intracranial hypertension and analgesics for diffuse bone pain. The etiological treatment is based on androgen blockade combined with cerebral radiotherapy.[4]

In the case of a single accessible metastasis, surgery can be indicated and improves the median survival.

A retrospective study on brain metastases of all tumors, carried out by HALL, found that brain metastases secondary to prostatic ADK and bladder tumors had a poor prognosis, with a median survival rate lower than that of other metastatic tumors.[5]

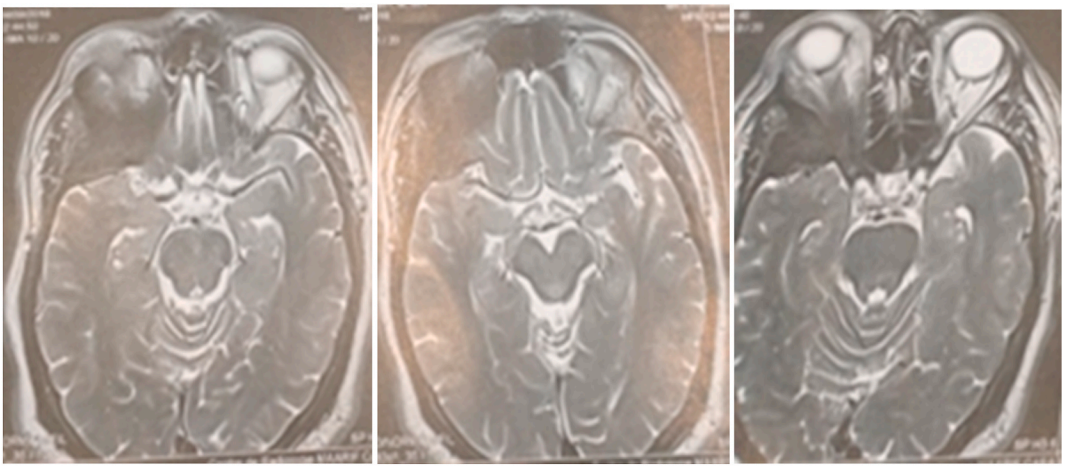

Fig. 3. Cranio-orbital MRI objectiving the spheno-orbital process.

Conclusion

Cerebral metastases secondary to prostate cancer pose a diagnostic problem with primary brain tumors. The clinical picture shows signs of neurological appeal and MRI allows the diagnosis to be suspected. These are generally of poor prognosis; their treatment is based on androgen deprivation and radiotherapy.

Declaration of competing interest

The authors state that they do not have competing interests.

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Abbreviation

PS	Performance status
CT	computed tomography
PSA	prostate-specific antigen
MRI	Magnetic Resonance Imaging

Ethical approval and consent to participate

Not available.

Consent to publication

The consent to publish this information was obtained from study participants. We confirm that **written** proof of consent to publish study participants are available when requested and at any time.

Availability of data and material

The datasets in this article are available in the repository of the urology database, Chu Ibn-Rochd Casablanca, upon request, from the corresponding author.

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Author's contributions

Dr. IJ, Dr. Dr. YL and Dr. AM analysed and performed the literature research, Pr. MD, Pr. AD, Pr. RA performed the examination and performed the scientific validation of the manuscript. Issam Jandou was the major contributors to the writing of the manuscript. All authors read and approved the manuscript.

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