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A Shoulder Mass Revealing a Metastatic Prostate Cancer

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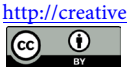

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Abstract

Introduction: A shoulder mass revealing metastatic prostate cancer is very rare. We report a case of metastatic prostate cancer diagnosed on a shoulder mass and treated with analgesic radiotherapy and chemotherapy and androgen deprivation therapy (ADT). **Observations:** A 66 years old patient was referred for a painful right shoulder mass whose biopsy and pathological examination found a Gleason 8 (4 + 4) moderately differentiated adenocarcinoma. The PSA level was 508.52 ng/ml. The patient was treated with analgesic radiotherapy on the right shoulder and chemo-hormonal therapy. At 2 years follow-up, the disease was well controlled. **Conclusion**: A shoulder mass revealing metastatic prostate cancer is not common. Local treatment of the symptomatic metastasis while continuing chemotherapy and ADT improves the quality of life.

Keywords

Shoulder, Prostate, Cancer, Metastasis

1. Introduction

Metastasis found at the time of cancer diagnosis accounts for 4% of prostate cancer diagnosis [1]. It is often a more aggressive disease compared to prostate cancer which progresses with metachronous metastases, both in terms of life expectancy and the duration of response to androgen deprivation therapy (ADT) [2]. The diagnosis of localized forms has become increasingly important, so are

the forms presenting with metastasis at initial diagnosis, owing to the development of diagnostic methods, mostly imaging [3]. Bone is the third most common metastatic site after the lung and liver [4]. Treatment is based on ADT combined with second-generation hormone therapy or docetaxel chemotherapy [5]. Some studies show a benefit of local treatment in selected presenting metastatic and hormone-sensitive prostate cancer [6] [7] [8]. It should be noted that metastases are a major cause of morbidity and affect the quality of life in 70% of cases; particularly because of the pain they cause [9]. Metastases can be treated with various radiotherapy regimens [10] [11] [12]. We report this case of the prostate cancer diagnosis on metastasis of the shoulder which was treated with analgesic radiotherapy and chemo-hormonal therapy.

2. Observation

A 66-year-old patient, without any particular pathological history, was referred to our clinic for a mass of the right shoulder that has been evolving for 3 years and became painful for 1 year. The mechanical pain was relieved by taking non-steroidal anti-inflammatory drugs. The physical examination revealed a 10 cm superior-posterior external mass of the right shoulder (**Figure 1** & **Figure 2**) with limitation of movements: arm raised forward limited to 45˚, laterally to 60˚. Biopsy of the mass and histological examination showed a moderately differentiated adenocarcinoma, Gleason 8 (4 + 4). The thoracic abdominal and pelvic CT scan showed a mass of the shoulder (**Figure 3** & **Figure 4**), a mass of the prostate and pulmonary nodules (**Figure 5**). Total PSA was 508.52 ng/ml and creatinine was 9.92 mg/ml. A bone scan was performed, showing disparate fixations in the spine in favor of bone metastasis. The multidisciplinary consultation recommended analgesic radiotherapy on the shoulder mass and chemotherapy in combination with ADT.

Radiotherapy consisted of a total dose of 30 Gy in 10 fractions to the shoulder with

Figure 1. Metastatic mass of the right shoulder of prostate cancer (anterior view).

Figure 2. Metastatic mass of the right shoulder of prostate cancer (posterior view).

Figure 3. Coronal CT scan showing a metastatic mass in the right shoulder of prostate cancer.

Figure 4. Sagittal CT scan showing a prostate mass.

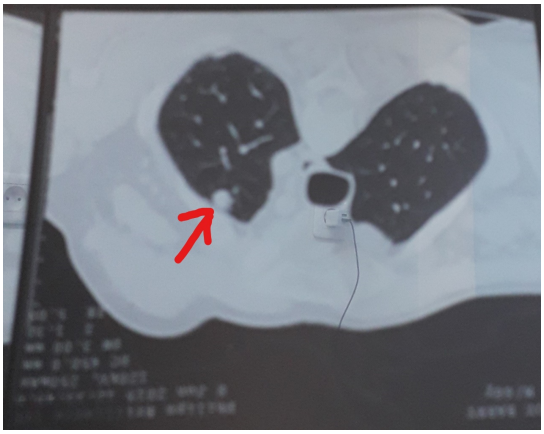

Figure 5. Axial CT scan showing a metastatic nodule in the lung of prostate cancer.

the total disappearance of mechanical pain and functional recovery of the shoulder. The patient received 6 cures of Docetaxel 60 mg/m^2 with grade 2 alopecia without other toxicities, hormone therapy based on LH-RH analogue with grade 2 sexual dysfunction. At 2 years of follow-up, the mass regressed considerably and the PSA level returned to 5.25 ng/ml.

3. Discussion

Near 4% of patients are found to be metastatic at the time of prostate cancer diagnosis [1]. These patients have a much more aggressive disease than the patients who progress with metachronous metastases. In these patients, the duration of hormone sensitivity and life expectancy are short [2]. Our patient was metastatic at the time of diagnosis.

The metastases preferentially target the bones and lymph nodes, but also the viscera such as the liver, lungs or brain [13]. In the bones, the pelvis and the spine were most often affected. The rare fact in our case was the revelation of cancer in his shoulder by a mass that could have been mistaken for a primary soft tissue and bone tumor. Indeed, although the bone and muscle are contiguous, their neoplastic invasion corresponds to different levels of progression and prognosis. The bone localization corresponds to an M1b type metastasis while the more advanced muscle localization corresponds to the M1c stage. Thus our patient did not have any urinary symptoms which would have made us look for a prostatic tumor.

Pain is not uncommon in metastatic prostate cancer, and it significantly affects the quality of life [9]. Apart from the analgesic drug, radiotherapy is an effective treatment that improves survival and quality of life [10] [11]. Different treatment regimens are used for three-dimensional pain relief radiotherapy. This includes the unfractionated 8 Gy scheme and the schemes 20 Gy in 5 fractions and 30 Gy in 10 fractions [14]. In our patient, the 30 Gy in 10 fractions scheme was used. It should be noted that many studies have shown the equivalence of unfractionated treatment in terms of pain relief compared to multi-fractionated

treatments. Moreover, scientific societies and organizations recommend the unfractionated regimen [14] [15] [16]. Nevertheless, there is heterogeneity of prescriptions linked to the practice setting and the age of the provider. Non-fractionated treatment is much more widely used in the United States and Japan [17] [18]. In Europe too, prescriptions vary from country to country, but unfractionated treatment was prescribed by a third and half of providers [19]. The age of the provider is also decisive in the decision. The older the radiotherapist, the more likely he or she is to use a non-split regimen [20]. In our case, the provider was 28 years old.

A survey conducted in 2009 showed that the dose most recommended by the specialists interviewed was 30 Gy in ten fractions, or 20 Gy in five fractions [14].

In addition to symptomatic treatment, metastatic prostate cancer is treated with chemotherapy and ADT [5].

The principle of ADT is to reduce testosterone levels to below 50 ng/ml. This strategy uses LH-RH agonists or antagonists [21]. The largest study and meta-analyses have shown an interest in the survival by using ADT, despite the discrepancy in the studies [22]. No benefit was found in terms of overall survival during the period of treatment (immediate or delayed) [16]. However, the immediate start of hormone therapy at the onset of symptoms can delay the onset of progression and complications. This has led to a consensus on the treatment of all cancers that are metastatic from the diagnosis [21].

This ADT is not sufficient for the treatment of metastatic cancers from the outset. Indeed, the CHAARTED and GETUG 15 meta-analyses show that the addition of docetaxel chemotherapy provides an overall survival benefit in patients with a large tumor volume [23]. The STAMPEDE retrospective analysis showed a comparable benefit whatever the tumor volume [24].

Our patient had a hormone therapy based on LH-RH analogue associated with 6 cures of docetaxel. At 2 years of follow-up, the shoulder mass regressed with a correct control of the PSA level.

4. Conclusion

The diagnosis of metastatic prostate cancer is not uncommon. However, the location on the shoulder is very rare. The multi-modal treatment shows a good response in our case. The local treatment of symptomatic metastasis by radiotherapy improves the quality of life.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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