



Testicular Metastasis: Uncommon Prostate Cancer Case Report

Caldas GP*

Campo Real University Center, Brazil

*Corresponding author: Gabrielle Petranhski Caldas, Campo Real University Center, Guarapuava, Paraná, Brazil, Tel: 42988014156; Email: gabriellepcaldas@hotmail.com

Case Report

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Abstract

Introduction: Prostate cancer is the second most frequent neoplasm in men, and despite being frequently diagnosed, testicular metastases are rarely described. Objective: to report a case of prostate cancer with testicular metastasis in a patient with more than 15 years of follow-up.

Case Report: Caucasian male patient diagnosed with prostate cancer in 2003 and bone metastasis in 2005. After years of follow-up and hormonal treatment, evolved with urinary retention. He underwent transvesical prostatectomy and bilateral orchiectomy. The anatomopathological examination indicated metastatic adenocarcinoma in the right testis.

Conclusion: This case demonstrates that prostate cancer can metastasize to rare sites, such as the testis. The presence of these reports helps clinical practice and adds to the literature, encouraging further studies on diagnostic approaches and treatment.

Keywords: Testicular; Prostate Cancer; Diagnosed; Metastatic

Abbreviations

ROS: Reactive Oxygen Species; PSA: Prostate Specific Antigen; ADT: Androgen Deprivation Therapy.

Introduction

Prostate cancer is the second most frequent cancer among men (after non-melanoma skin cancer) in Brazil. In developed countries, the incidence rate is higher as compared to developing countries [1]. Epidemiological studies show that the risk of diagnosis of prostate cancer has a strong familial component [2], being twice as high for patients with affected parents at any age, and four times when two or more first-degree relatives had the disease [3].

Age is the main risk factor, starting at 50 years, with an average of 72 years [4]. Genetic alterations such as BRCA-2 mutation and increased reactive oxygen species (ROS) and

reactive nitrogen species released by immune cells have also been evidenced as risk factors, causing direct damage to DNA and genetic instability [5].

The evolution of prostate cancer occurs in a *continuum* process, from the appearance of a pre-neoplastic and invasive lesion located in the prostate to a metastatic lesion. Usual acinar adenocarcinoma accounts for more than 95% of identified tumors [6]. The most typical locations for metastasis are the pelvic lymph nodes, bones, lungs and liver; rarely metastasize to testis. The objective of this work is to report a case of prostate cancer with subsequent diagnosis of testicular metastasis [7].

Case Report

F,J,G, 78 years old, male, seeks medical attention due to a urinary retention caused by hematuria and constipation. History of prostate cancer, acquired 17 years ago, bone



metastasis diagnosed 2 years later, under hormonal treatment with Leuprorelin and Pamidronate, remaining asymptomatic until medical check. Last check-up with oncology, presented a serum prostate-specific antigen (PSA) level of 13 ng/ml. He also had a history of alcoholism, sedentary lifestyle and stroke 8 years ago, with neurological and motor sequelae.

On physical examination, there were no palpable masses; digital rectal examination showing a large, irregular, stony prostate, smooth mucous membranes and no tumors, clinically stable.

- **Ultrasonography:** 148 g prostate and alterations suggesting chronic nephropathy.
- **Colonoscopy:** presence of non-malignant polyp. Because of the condition, tunneling of the prostate (transvesical prostatectomy) and bilateral orchiectomy were chosen, with no complications in the procedure. Last control of total PSA level: 12,39 ng/dl.
- **Anatomopathological:** Orchiectomy: metastatic adenocarcinoma in the right testis. Prostate with usual acinar adenocarcinoma gleason 9 (5+4) Figures 1& 2.

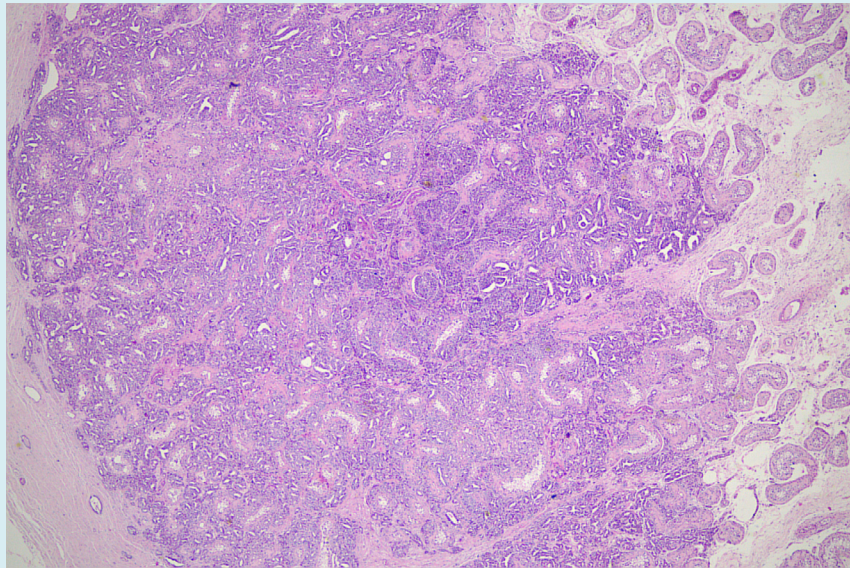


Figure 1: Anatomopathological examination of the right testis. (HE-Stained, 20x).

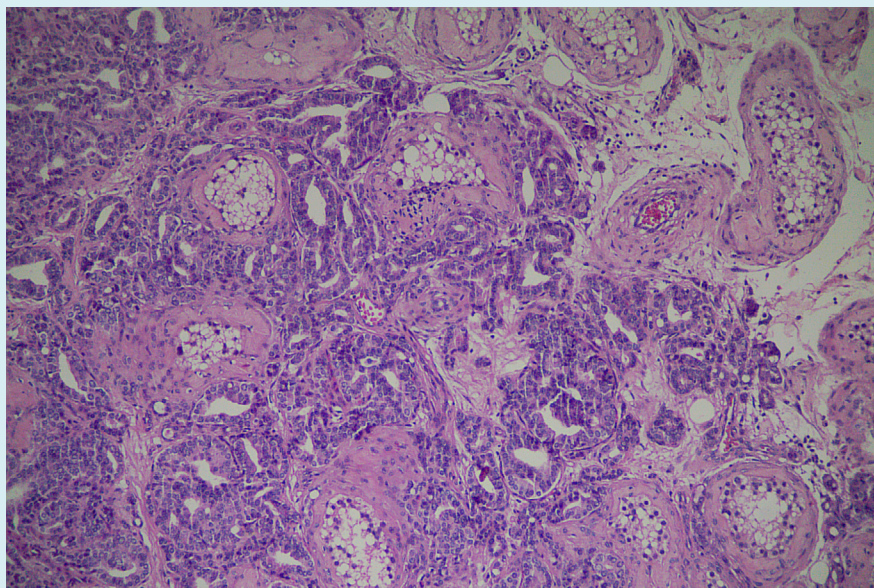


Figure 2: Anatomopathological analysis of the right testis. (HE-Stained, 100x).

Discussion

In advanced prostatic neoplastic disease, local extension often affects the periprostatic tissue, the seminal vesicles and the base of the urinary bladder, and may even cause ureteral obstruction. Metastases spread via the lymphatics, to the obturator lymph nodes, and subsequently to the paraaortic lymph nodes. The hematogenous dissemination occurs to the bones, mainly to the axial skeleton, rarely some lesions disseminate to the viscera, affecting the lungs, liver and brain [8]. With the exception of leukemia and lymphoma infiltration, secondary testicular neoplasia is rare, with an overall incidence of 0.06% [9].

Testicular metastases are usually asymptomatic and detected incidentally during an autopsy or after bilateral orchiectomy for hormonal tumor suppression in advanced prostate cancer [9]. There are rare cases of patients who present edema, pain or testicular masses [10]. Metastases can progress through four possible mechanisms: arterial embolism, via the vas deferens lumen, venous route, and retrograde lymphatic pathway [11].

In the treatment of metastatic disease, radical prostatectomy has no therapeutic value in this phase of the disease, as tunneling may be indicated in cases with obstructive urinary symptoms [12]. However, the main objective in metastatic cases is systemic treatment aimed at reducing symptoms and prolonging survival with quality of life. The main form of systemic treatment for metastatic prostate carcinoma is Androgen Deprivation Therapy (ADT), which in this case started with the use of an LHRH agonist (Leuprorelin) and was replaced by orchiectomy when the patient was submitted to tunneling. The finding of metastasis to the testis was an incidental finding in this case.

Normally, after diagnosis of testicular metastasis, the prognosis is unfavorable, as the disease already has systemic dissemination [13]. In the absence of treatment, the survival of these patients can be only 6 to 18 months [10].

Our patient was treated by bilateral orchiectomy and tunneling for the treatment of obstructive symptoms, the patient died due to his advanced metastatic disease six months after the intervention.

Conclusion

Testicular metastases secondary to prostate cancer are very rare. In our case, the patient did not have symptoms, but it is important to consider this differential diagnosis for those with prostate cancer and painless nodules or swelling of the testicles that may require additional interventions.

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