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Ureteral Metastasis Secondary to Prostate Cancer: A Case Report

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ABSTRACT

Prostate cancer is very frequent, but secondary ureteral metastasis are extremely rare. We present a 55 year old man with a 2 month history of right flank pain and lower urinary tract symptoms. Prostatic specific antigen of 11.3 ng/mL. Computed tomography showed right hydroureteronephrosis, a developing urinoma and right iliac adenopathies. He underwent right ureteronephrectomy, iliac lymphadenectomy and prostate biopsy. Pathology revealed prostatic carcinoma infiltrating the ureteral muscularis propria, without mucosal involvement. There are 46 reported cases of prostate cancer with ureteral metastases. Ureteral metastasis are a rare cause of renal colic and need of a high index of suspicion.

Introduction

Prostate cancer is very frequent in the whole world, with a global incidence of 25.3 per 100.000 men.[1] Most common sites of metastasis are bones, lung, liver and pleura.[2] Despite the high incidence of this malignancy, secondary ureteral metastases are extremely rare, with only 46 cases reported to date. We present an unusual case of symptomatic ureteral metastasis in a previously healthy 55-year-old man.

Case report

In August 2012, a 55-year-old man without previous morbid conditions presents with a 2 month history of progressive pain in the right flank, irradiated to the ipsilateral testicle, associated to lower urinary tract symptoms, with storage-predominance. No hematuria was present. He had a PSA of 5.6 ng/mL from a previous evaluation and a non-contrast computed tomography showing dilation of the right ureter, with no evident lithiasis. On examination, he was afebrile, with pain on the right flank at percussion in the costovertebral angle and at bimanual palpation of the kidney. There were no palpable masses in the abdomen nor pelvis. On digital rectal examination, there was an enlarged nodular prostate, globally indurated.

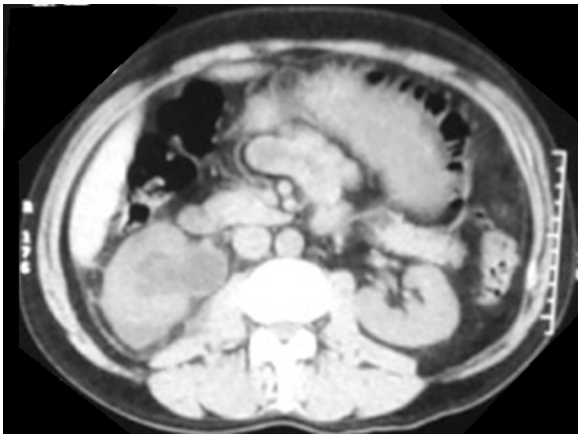

Figure 1. Computed tomography urogram. Moderated right hydroureteronephrosis is shown, without left urinary tract involvement.

Laboratory showed C-reactive protein of 200 mg/dL and PSA of 11.3 ng/mL. A prostate transrectal needle biopsy was performed. The computed tomography urogram evidentiated moderated right hydroureteronephrosis, urine extravasation, apparent developing urinoma and right iliac adenopathy (Fig. 1). With the intention of performing right ureteral catheterization, the patient underwent urethrocystoscopy, which showed an enlarged obstructive prostate, without invasion to the bladder. Ureteral orifices were both permeable, but catheterization was impossible due to ureteral stenosis. In the next 48 hours, the patient developed rapid deterioration of his general clinical status. Because of this and the high

Abbreviations: PSA, Prostatic specific antigen; PSAP, Prostate specific acid phosphatase.

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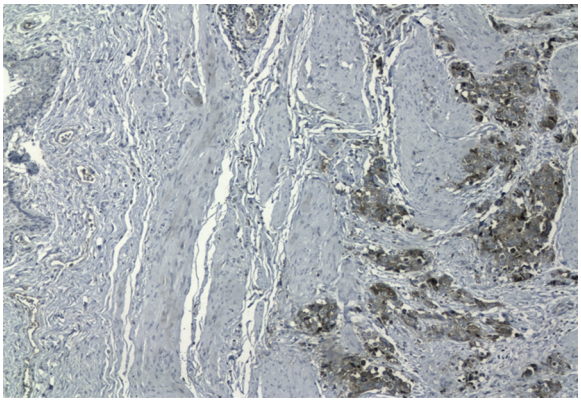

Figure 2. Immunohistochemistry of ureteral tissue, with anti-PSA and anti-PSAP. Cytoplasmic staining of neoplastic cells infiltrating the muscularis propria is seen on the right of the picture.

suspicious of ureteral malignancy, he underwent right ureteronephrectomy plus right iliac lymphadenectomy. Intra-operative frozen section of lymphadenopathy was informed as undifferentiated adenocarcinoma.

Pathological examination revealed periureteral and perivesical fibroadipose tissue infiltrated by an undifferentiated solid carcinoma, suggestive of a prostatic adenocarcinoma. This was confirmed by immunohistochemistry with anti-PSA and anti-PSAP, where cytoplasmic staining of neoplastic cells infiltrating the muscularis propria was evident. There was no involvement of the mucosa (Fig. 2). Prostate biopsy showed acinar adenocarcinoma, Gleason 9 (5 + 4).

Three months after surgery, bone scintigraphy made evident bone metastases in pelvis and right femur. Patient was managed with complete androgen blockade. Prostate-specific antigen decreased to a nadir of 0.45 ng/mL, before raising to 14.8 ng/mL at 1 year after surgery. He started on chemotherapy with docetaxel. Focal radiotherapy was performed for bone pain management. Two years after the initial diagnosis was made, the patient deceased at his home.

Discussion

Ureteral metastases are very infrequent. The first case published was in the year 1909, by Bond Stow. A review made by Cohen et al showed that the most frequent primary tumors were originated in breast, colon, lymphoma and lung, without any prostate cancer identified in that review.[3] To our knowledge, only 46 cases of ureteral metastases secondary to prostate cancer have ever been published. Of these, about 85% are asymptomatic at diagnosis and most of them are identified in patients with known prostate cancer.[4,5] The mechanism of metastasis is not fully understood. Lymphatic retrograde dissemination is one of the most accepted theories and it would be consistent with this case, where ipsilateral lymph node involvement was present.

Conclusion

Ureteral metastases from prostate cancer are extremely infrequent in the natural history of this disease. They are usually asymptomatic and need of a high index of suspicion. Clinicians should be aware of its existence and suspect it when there is an unclear cause of ureteral dilation and an elevated PSA. Correct identification of the primary tumor can be crucial for the management of the disease. This case helps us to keep the awareness of very severe diseases that can be hidden behind very common clinical situations, such as the renal colic.

Conflicts of interest

None of the authors have any conflicts of interest to disclose.

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