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Renal colic secondary to ureteral metastasis: Rare presenting manifestation of prostate cancer

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Abstract

Objective: Ureteral metastasis of prostate cancer is a very rare pathology, that can be confused with an upper urinary tract urothelial carcinoma, with great implications in the surgical management and therapy of the disease.

Case: A 56-years old male patient admitted to the emergency room with 2 weeks history of left flank pain without low urinary tract symptoms or hematuria. PSA level was 43,4 ng/ml. The patient underwent prostate needle biopsy and ureteral biopsy using flexible ureteroscopy, after the Lich-Gregoire ureterovesical reimplantation. In this case, renal colic as the first symptom of a ureteral metastasis secondary to prostate cancer is extremely rare which diagnosed in the patient.

Conclusion: Neoureterocystostomy is a safe and effective treatment for ureteral obstruction due to prostate cancer metastasis, with low morbidity and significant benefits in terms of quality of life for patients with life expectancy more than 10 years.

Keywords: prostate cancer, ureteral metastasis, ureteral reimplantation

Introduction

Prostate cancer represents the first cause of malignancy in 2018 for the male population in Europe, with an incidence of 62,1 per 100,000 (age-standardized rate), and the second cause worldwide with an incidence of 29,3 per 100,000 (1). Ureteral metastasis of prostate cancer is a very rare pathology, wich only 51 cases have been reported in the literature. We report a rare case of symptomatic distant ureteral metastasis from prostate cancer as the first manifestation of this disease.

Case

A 56-years old male was applied to the emergency room in march 2017 because of left flank pain for about 2 weeks with no low urinary tract symptoms or hematuria. He had no significant past medical history. The ultrasound revealed a grade II left ureter-hydronephrosis and a prostate with a volume of 43,4 cm3. The prostate was a left indurated nodular lesion with no sign of local extension according to a digital rectal examination.

The laboratory work-out showed an increase in serum creatinine level (1,14 mg/dl) and the increased PSA level was found as 43,4 ng/dl. The eventuated long-delayed left renal function with a late-nephrogram image (120 min) and normal right kidney function have been determined with an intravenous urogram.

A needle transrectal ultrasound-guided prostate biopsy was performed followed by a urethra cystoscopy that revealed no bladder invasion, with permeable ureteral orifices. In order to evaluate the upper urinary tract, we performed a flexible uretero-nephroscopy that highlighted a small tumor at 5 cm proximal of the left ureteral orifice which was biopsied, with no other lesions of the urinary collecting system. A left double J stent was inserted.

Pathological examination of the prostate biopsy revealed an acinar adenocarcinoma, Gleason 3+3, and the ureteral biopsy showed an adenocarcinoma suggestive of prostatic cancer.

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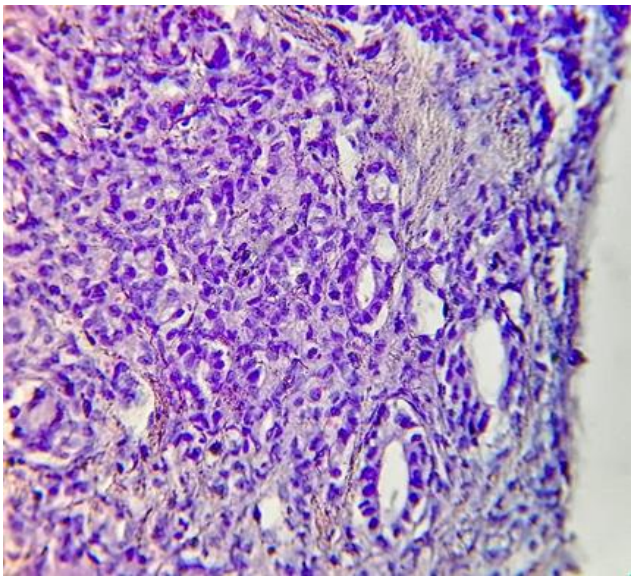

Figure 1: Histopathological specimen from prostate biopsy

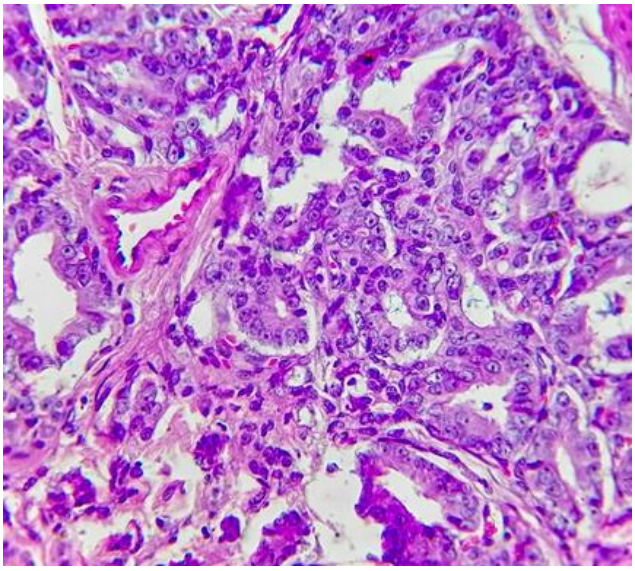

Figure 2: Histopathological specimen from ureteral biopsy

The CT scan showed bilateral iliac and retroperitoneal lymph node enlargement (involvement). The patient received hormonal therapy for prostate cancer consisting of goserelin 10,8 mg subcutaneous implant once 3 months.

According to Calculator for Estimating Overall Life Expectancy and Lifetime Risk for Prostate Cancer Death in Newly Diagnosed Men Managed without Definitive Local Therapy nomogram the predicted survival of the patient was of 16.0 years, so we decided to perform partial ureterectomy with Lich-Gregoire ureterovesical reimplantation (2).

Pathological findings after the surgery consisted of tumor infiltration of the entire ureteral wall of an adenocarcinoma suggestive for prostate cancer.

After the surgery the patient received radiotherapy for prostate cancer as follows: Total 78 Gy in 39 fractions for the prostate, Total 56 Gy in 28 fractions for seminal vesicles, and total 50,4 Gy in 28 fractions for pelvic lymph nodes.

The patient was evaluated, using ultrasound examination, CT scan, and PSA levels, every 3 months for a year and every 6 months for the second year. PSA levels had decreased to under the 2 ng/ml, with normal serum creatinine levels, with no dilatation of the upper urinary tract at 24 months.

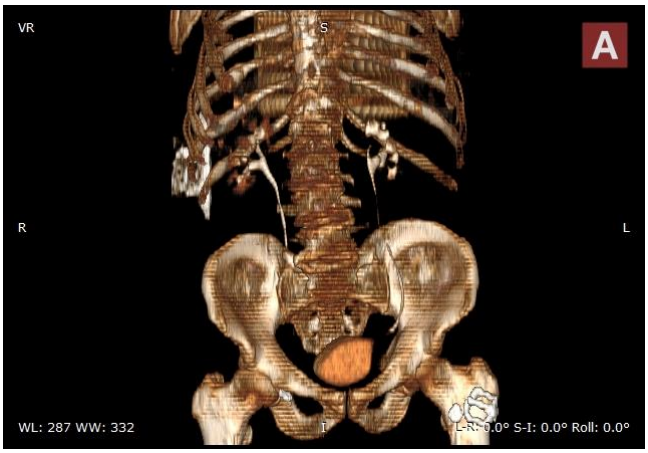

Figure 3: 3-D reconstruction of 6 months postoperative CT scan

Discussion

Metastatic prostate cancer involvement of the ureter is extremely rare. A population-based analysis of metastatic sites in patients with prostate cancer published by Gandaglia et al. showed that the most frequent sites of metastases are the bones, lymph nodes, liver, thorax, and brain. In the same study were mentioned metastases of the retroperitoneum, kidney, and adrenal glands, but with no mention of the ureter (3)

For complete obstruction of the ureter from tumoral involvement, the treatment of choice for long term obstruction relief is the placement of a nephrostomy tube, which is associated with important complications such as febrile UTI, perirenal abscess, dislodgement of a nephrostomy tube, local inflammation and dermatitis of nephrostomy tract, and hemorrhage during nephrostomy placement. (4,5)

The difficulty of diagnosis was high because of the lack of bone metastasis in the presence of iliac and retroperitoneal lymph nodes involvement, which could also be suggestive for upper tract urothelial carcinoma.

Conclusion

The ureter represents a rare site of distant prostate metastasis in the natural evolution of this disease. Tumoral obstruction of the ureter and kidney are usually asymptomatic, and the association of other clinical sings as renal colic or hematuria may lead to some difficulties in the diagnosis.

Correct diagnosis of primary tumor pathology is essential in the correct setting of therapeutic conduct, which is why clinicians need to be aware of the possibility of metastasis in the ureter and suspect it when they encounter ureteral obstruction in clinical practice along with clinical and paraclinical suspicions of cancer prostate (PSA or digital rectal examination).

Neoureterocystostomy is a safe and efective treatment of ureteral obstruction due to prostate cancer metastasis, with low morbidity and significants benefits in terms of quality of life for patients with life expectency more than 10 years.

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Conflict of interest: The authors declare that they have no conflict of interest.

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