Urothelial carcinoma of prostate
– case report –

Manuela Enciu, Mariana Aşchie, Liliana Mocanu
Clinical Service of Pathology, Emergency County Hospital, Constanţa, Romania

Abstract

Introduction: Urothelial carcinoma, without bladder involving, is an extremely rare lesion.
Case presentation: We present the case of a male patient, MI, 64-year-old, who complained, in February 2012, of complete chronic urinary retention, dysuria, and polachiuria. A transurethral prostatic resection surgery under spinal anesthesia was performed. Histopathological examination revealed urothelial carcinoma and immunohistochemical tests were recommended. The use of monoclonal antibodies revealed the primary nature of the tumor. The characteristic features plead for the final diagnosis of urothelial carcinoma of the prostate, stage pT1b. Cystoprostatectomy with lymphadenectomy was performed. Histopathology revealed also the prostatic origin of the tumor.
Conclusion: Patient history, microscopic appearance and immunohistochemical techniques can exclude invasion of the bladder. Diagnosis of the pure type of primary urothelial carcinoma is very important due to peculiarities: aggressive biologic behavior, local invasion, bone and liver metastasis, poor prognosis and radical surgery to cure.

Key words: urothelial carcinoma, prostate, immunohistochemistry

Correspondență: Manuela Enciu
Serviciul Clinic de Anatomie patologică, Spitalul Clinic Județean de Urgență Constanța
B-dul Tomis nr. 145, cod 900591
Telefon: +40767745497
E-mail: iftimemanuela@yahoo.com
Prostate cancer occupies the second place in the incidence of malignant neoplasms in males. Histopathologically, about 90% of prostate cancers are acinar adenocarcinomas.

Urothelial or transitional cell carcinoma of the prostate, as primary tumor, represents less than 2% of all carcinomas.

**Case report**

We present the case of a male patient, MI, 64-year-old, with history of duodenal ulcer, that is hospitalized in the Department of Urology, Clinical Hospital of Constanța, of complete chronic urinary retention, dysuria, and polachiuria. PSA has a value of 4 ng/dl. A transurethral prostatic resection surgery under spinal anesthesia was performed. Following clinical examination and laboratory investigations, the clinical diagnosis was prostate tumor and a transurethral prostatic resection surgery was performed. The histopathological and immunohistochemical analysis was performed in the Clinical Service of Pathology was performed in the Clinical Service of Pathology, Emergency County Hospital, Constanța. Macroscopic examination revealed the presence of multiple fragments with variable diameters, which measures overall 4,5/4/0,5 cm, gray-pinkish colored, low consistency.

The specimen was fixed in 10% formalin and included in five blocks. The sections were stained with Hematoxylin-Eosin.

Histopathological examination (case number 1443/2012) revealed fragments of prostate tissue composed of cells with clear cytoplasm, enlarged nuclei and prominent nucleoli (Fig. 1) and perineural invasion (Fig. 2).

Immunohistochemical tests were mandatory for certainty diagnosis of prostatic urothelial carcinoma. There were applied:

- monoclonal Mouse anti-Human Prostatic Specific Antigen (PSA), Clone ER-PR 8, Isotype IgG1 Kappa (DAKO);
- monoclonal Mouse anti-Human High Molecular Weight Cytokeratin, Clone 34âE12, Isotype IgG1, Kappa (DAKO);
- monoclonal Mouse anti-Human Citokeratine 7, Clone OV-TL 12/30 (DAKO);
- monoclonal Mouse anti-Human Citokeratine 20, Clone Ks20.8 (DAKO).

The application of monoclonal antibodies revealed these features:

- positive immunoreaction in basal membrane and positive cytoplasmic immunoreaction for High Molecular Weight Cytokeratin in tumor cells;
- positive immunoreaction for CK7 and CK20 in cytoplasm of neoplastic cells;
- negative reaction for PSA.
These features plead for final diagnosis of urothelial carcinoma of the prostate with high-grade malignancy, pT1b stage. Cystoprostatectomy with lymphadenectomy was performed. Histopathology revealed also the prostatic origin of the tumor.

Discussion

The incidence of transitional carcinoma of the prostate varies between 1 and 5% of all malignant neoplasms at this level, according to reports. Regarding the diagnosis of these tumors, primary forms are extremely rare, most cases of urothelial carcinoma representing invasion of bladder carcinomas (1,2).

Although the incidence is low, the importance of diagnosing this particular form of carcinoma is determined by its features: lack of responsiveness to the hormone therapy, aggressive biologic behavior, local invasion, bone and liver metastasis.

Clinical manifestations are represented by complete or incomplete retention of urine, hematuria, prostatitis and are similar to those of typical adenocarcinoma. In these case, symptoms were similar, except for hematuria.

According to literature data, the average age of diagnosis is 70 year, compared with this case, in which age was 64 years. Serum levels of PSA or prostatic acid phosphatase (PAP) are usually within normal limits (3), as in case presented.

Diagnostic criteria are similar to those used in the diagnosis of urothelial carcinoma of the bladder and urethra.

Histopathologically, the tumor cell proliferation has its origin in the periurethral glands and ducts (1,4).

The neoplastic cells are characterized by a solid pattern, with pleomorphic nuclei and increased mitotic index. They may be accompanied by tumor necrosis and peritumoral inflammation (2). Stromal component is frequently invaded and is an important prognostic factor. In urothelial tumors that originates from the bladder, the neoplastic bladder neck cells invades directly prostatic tissue. In patients diagnosed with urothelial bladder carcinoma, prostate invasion is done through the urethra and ducts. Immunohistochemically is recommended using a panel of monoclonal antibodies. These tumors are negative for PSA and PAP. HMWCK is usually positive in the cytoplasm of tumor cells. Regarding the use of CK7 and CK20 antibodies, immunostaining for CKCK7 is more pronounced and immunoreaction for CK20 is mild.

Studies have shown that some urothelial carcinomas are negative for these two markers, considering that there are specific and requires corroboration with other markers to achieve certainty diagnosis. The lesion is also positive to Uroplakin and Thrombomodulin. Immunohistochemical profile of these tumors is similar to bladder carcinomas (5).

Urothelial prostatic carcinomas tend to invade adjacent bladder tissues in more than 50% of cases (6), as was highlighted in these case. Five years survival rate varies between 50 and 100% in patients with carcinoma in situ and between 20 and 60% in patients with stromal invasion (7, 8). In a review of three cases made by Nicolaisen and Williams, was observed in patients with urinary obstruction an aggressively behavior and indication for radical surgery intervention for improved survival rate (9).

Conclusions

In conclusion, using immunohistochemistry methods represents an integral part in establishing the origin of this tumor, with a panel of monoclonal antibodies. These examinations are complementary to histomorphology aspects, to confirm urothelial carcinoma of prostatic origin.

References

Rezumat


Cuvinte cheie: carcinom urotelial, prostată, imunohistochimie