Renal type clear cell carcinoma of prostate

Sir,

Clear cell carcinomas of the urinary tract often present a diagnostic challenge. Renal-type clear cell adenocarcinoma occurring as a primary tumor in an extra renal location, especially in prostate is very rare and was first described in 2003.

A 64-year-old patient presented with indwelling catheter for chronic urinary retention. He had features of prostatism for the last eight years for which he was on finasteride. On digital rectal examination he had a firm prostate with smooth surface. Ultrasonography suggested 56 gms prostate with normal upper tract. He was normoglycaemic with normal renal biochemical parameters. Urine culture showed significant growth of E. coli. His serum prostate specific antigen (PSA) was 2.1 ng/L. On transurethral resection 38 gms of prostate was removed. Multiple blocks were prepared and histopathological examination suggested a raggedly outlined, raggedly infiltrating fused glandular tissue [Figure 1] with large pale cells (hypernephroid) having clear cytoplasm in most of the areas and focal areas of granular eosinophilic cytoplasm. The nuclei showed moderate pleomorphism and hyperchromatism containing prominent nucleoli, with low mitotic activity. The urothelium of the prostatic urethra was unremarkable. Histopathological picture was similar to the clear cell carcinoma of the kidney. Using standard immunohistochemical procedure on paraffin sections the clear cells were immunoreactive for pancytokeratin, vimentin and EMA. The tumor did not immunohistochemically express PSA or prostatic acid phosphatase and was negative to high molecular weight cytokeratins. No intracytoplasmic mucin was noted in the focal areas of granular eosinophilic cytoplasmic cells on mucicarmine staining. Postoperatively a contrast CT scan of the pelvis suggested residual prostatic tissue without any local or regional metastasis. After thorough counseling with the patient a radical prostatectomy was planned but he refused for any further operation. Till one year of follow-up the patient is doing well without any metastasis in pelvic nodes on MRI.

Renal type clear cell adenocarcinoma of the prostate is extremely rare pathologic entity and only few cases are reported till now.[1,2] Apart from prostatic adenocarcinoma, clear cell adenocarcinoma should be differentiated from other cancers showing clear cell cytoplasm, such as clear cell urothelial carcinoma secondarily involving the prostate. Though renal cell carcinoma is the classic example of clear cell carcinoma, only two cases metastasis in the prostate are reported.[23] In our case there was no clinical or radiological evidence of renal tumor, having a straightforward histological pattern with frank malignant behavior with a normal prostatic uroepithelium.

The hypernephroid pattern is a very rare variant of fused glands with clear or very pale staining cytoplasm as in our case. Like clear cell RCC, the present case was immunoreactive to pancytokeratin, vimentin, EMA and it was negative for high molecular weight cytokeratins.[1-3] Until now no clear idea exits regarding the therapeutic regime and prognosis. The biologic course of the tumor needs to be defined.

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