Transformation of prostatic adenocarcinoma to well differentiated neuroendocrine tumor after hormonal treatment.

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Abstract
Carcinoid tumor of the prostate is extremely rare. Here we report a unique case of prostate cancer that underwent complete transformation from conventional adenocarcinoma to carcinoid-like tumor shortly after androgen deprivation treatment (ADT). The patient was a 59 years old man who presented with lower urinary tract symptoms. His biopsy specimen demonstrated a high-grade prostatic adenocarcinoma with mixed acinar and ductal features. After ADT for 6 months, the patient underwent radical prostatectomy. The post-ADT tumor showed monotonous neoplastic cells with fine granular chromatin forming rosette-like structures, resembling a carcinoid tumor. No residual conventional adenocarcinoma was present. On immunostain, the tumor cells were diffusely positive for synaptophysin and chromogranin and negative for prostate specific antigen (PSA) and prostein. Thus the carcinoid-like tumor represented complete transformation from prostatic adenocarcinoma to well differentiated neuroendocrine tumor after ADT. This unique case highlights the important role of ADT in neuroendocrine differentiation of prostate cancer.

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