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ADRENAL METASTASIS FROM TRANSITIONAL CELL CARCINOMA OF THE BLADDER: A CASE REPORT

Işıl Z. YILDIZ[1], Gaye GÜLER TEZEL[1], Bülent AKDOĞAN[2], Haluk ÖZEN[2]

We report a case of transitional cell carcinoma of the bladder metastasizing to the adrenal gland. A 69-year-old male who underwent total cystoprostatectomy due to bladder cancer had a disease-free period of 13 months after the operation. However, subsequently, a necrotic mass in the right adrenal gland was detected on routine follow-up upper abdominal MRI and confirmed on surrenal gland CT. Right adrenalectomy was performed and, after a comparative microscopic examination of the tissue slides of the two specimens, a diagnosis of metastatic tumor of the adrenal gland from the transitional cell carcinoma of the bladder was made. Currently, the patient is under follow-up with no recurrence or new metastasis 12 months after adrenalectomy.

Key Words: Transitional Cell Carcinoma, Bladder, Adrenal, Metastasis.

MESANENİN TRANSİZYONEL HÜCRELİ KARINOMONUN ADRENAL BEZE METAİTAZI: OLGU SUNUMU

Bu makalede adrenal beze metastaz yapmış bir mesane transizyonel hücreli kanser olgusu sunulmuştur. Mesane kanseri nedeniyle total sistoprostatektomi yapılmış 69 yaşındaki erkek hasta operasyon sonrası izlemde 13 ay süreyle hastalıksız yaşamış, bu sırada yapılan rutin üst abdominal MR ve BT incelemelerinde sağ adrenal bezde nekrotik bir kitle saptanmıştır. Sağ adrenelektomi yapılan hastanın rezeksiyon materyali incelendiğinde ve ilk tumor dokusu ile karşılaştırıldığında bu kitlenin mesanedeki transisyonel hücreli tümörün metastazı olduğuna karar verilmiştir. Halen hasta adrenelektomi sonrası 12. ayında rekürrenssiz olarak izlenmeye devam edilmektedir.

Anahtar Kelimeler: Transizyonel Hücreli Kanser, Mesane, Adrenal, Metastaz.

[1] Hacettepe University Faculty of Medicine, Department of Pathology,
[2] Hacettepe University Faculty of Medicine, Department of Urology, Ankara, Turkey

Adrenal metastases have been reported in about 30% of patients with metastatic tumors from different primary sites (1). The lung is the most common primary tumor site (35%), followed by the stomach (14%), the esophagus (12%) and the liver/bile ducts (10%) (2). Fifty percent of metastatic tumors of the adrenal gland are unilateral (2). Muscle-invasive bladder cancer is known to be metastatic at a rate of 68%, and the adrenal gland is a site of metastasis in 14% of these cases (3). We report a case of metastatic tumor of the right adrenal gland frommuscle-invasive bladder carcinoma.

CASE REPORT

A 69-year-old male underwent total cystoprostatectomy due to bladder cancer in 2002.

Microscopic examination of the specimen showed papillary urothelial carcinoma. After a uneventful postoperative period, routine control upper abdominal MRI showed and surrenal gland CT confirmed a necrotic mass in the right adrenal gland. There were no other signs of local recurrence or distant metastasis on radiological examinations.

Laboratory examinations revealed normal serum levels of adrenocorticotropic hormone, aldosterone, cortisol, adrenalin, noradrenalin and dopamine. Right adrenalectomy was performed.

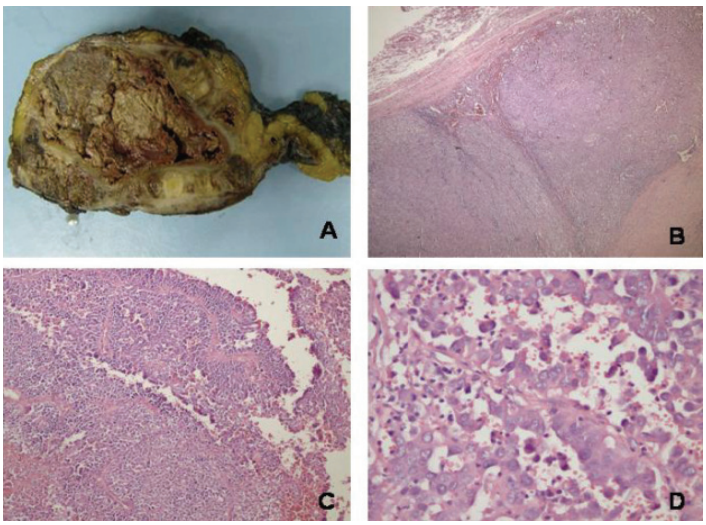


Figure 1: Metastatic tumor infiltrating the adrenal gland. Note the necrotic and hemorrhagic, solid tumor (A). Nodular tumor separated by fibrous septae from adjacent tissue (B) (HE, X40). Papillary structures with fibrovascular core are noted (C) (HE, X100). Close-up view of the neoplastic cells with pleomorphic nuclei and eosinophilic cytoplasm (D) (HE, X 400).

Macroscopically, the normal adrenal gland structure was completely destroyed and replaced by an encapsulated, necrotic and hemorrhagic tan-brown solid lesion that was divided into compartments by fibrous septae (Fig. 1A). Microscopic examination revealed a hypercellular, mostly necrotic, solid and papillary neoplasm separated by a fibrous capsule from the surrounding adipose tissue (Fig. 1B, 1C). Neoplastic cells had large, pleomorphic nuclei with fine chromatin. Cellular borders were mostly indistinct. The cytoplasm was eosinophilic and granulated in general but cells with clear cytoplasm were also present (Fig. 1D). Thin fibrous septae and chronic inflammatory cells were observed between the neoplastic cells. A high mitotic index and invasion of the capsule and the lymphovascular space were noted.

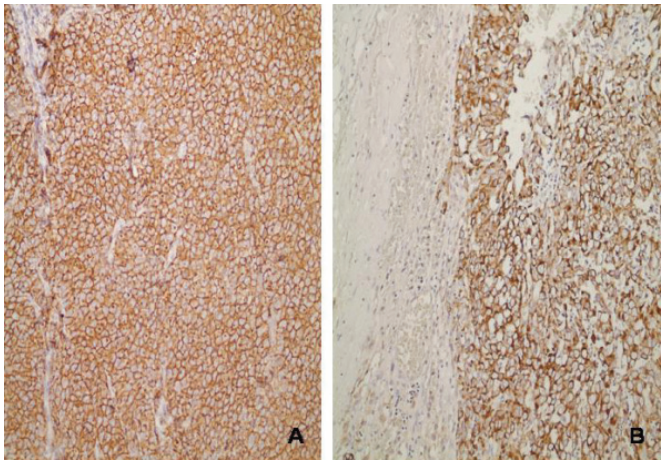


Figure 2: Immunohistochemically neoplastic cells are diffusely positive for EMA (A) and focally positive for CK (B) (IHC, X200).

Numerous serial sections were taken and it was observed that the adrenal tissue was completely replaced by the tumor. Immunohistochemically, neoplastic cells were diffusely and strongly positive for EMA and focally positive for CK (Fig. 2A, 2B), and negative for vimentin, synapthophysin and chromogranin. The tissue slides from the patient's prior cystectomy specimen were re-evaluated and compared with the adrenalectomy tissue samples and it was concluded that the morphologic properties were similar. With the histopathological properties described above and the support of the immunohistochemistry, a diagnosis of metastatic tumor of the adrenal gland from the transitional cell carcinoma of the bladder was made. Currently, the patient is under follow-up with no recurrence or new metastasis 12 months after the adrenalectomy.

DISCUSSION

The most common lesion in the adrenal gland is metastatic tumor in autopsy studies (4). Lam and Lo reported 90% of metastatic lesions to be carcinomas (2). They also reported the primary sites to be the lung, stomach, esophagus, liver/bile duct, pancreas, large intestine, kidney, breast, thyroid gland, gall bladder, urinary bladder, upper aerodigestive tract, small intestine, female genital tract and male genital tract in order of decreasing frequency (2). Wallmeroth et al. reported the sites of metastases in their autopsy study of 367 muscle-invasive bladder cancer patients as follows: regional lymph nodes 90%, liver 47%, lung 45%, bone 32%, peritoneum 19%, pleura 16%, kidney 14%, adrenal gland 14%, and the intestine 13% (3). Lam and Lo found approximately half of the metastases to be unilateral, mostly on the left side. It is uncommon to find a solitary adrenal metastasis in the absence of metastasis to other organs.

Despite the frequency of metastasis to the adrenal gland, Addison's disease is rare. Adrenal metastasis is frequently detected shortly after the primary tumor discovery (median latent period = 7 months) (2), but late presentations also exist. Therefore, an adrenal mass in a patient with a history of previous malignancy should always alert the physician to the possibility of metastasis, even if many years have passed.

Due to the widespread use of abdominal ultrasonography, CT and MRI, the detection of "incidentalomas" has increased. Some incidentalomas turn out to be metastatic tumors from another primary cancer, particularly the lung or breast. They may be overlooked because of their asymptomatic, solitary and unilateral nature. As metastatic status determines the prognosis, we, as pathologists, need to concentrate on how to make a better prediction of the metastatic capability of muscle-invasive bladder cancer while making the preliminary diagnosis.

Correspondence Address:
Gaye Güler Tezel, MD, PhD,
Hacettepe Üniversitesi Tıp Fakültesi
Patoloji Anabilim Dalı
06100 Ankara, Türkiye
Tel: 312-305 15 55
Fax: 312-305 26 21
E mail: gayejp@yahoo.com

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