

Bladder Metastasis of non-Small Cell Lung Cancer: an Unusual Cause of Hematuria

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ABSTRACT

Approximately 2% of bladder malignancies are metastatic. The lung cancer makes metastasis sporadically to the bladder. A 69-year-old female patient presented with a history of pain in kidneys, vomiting and hematuria. Cystoscopic examination of the patient revealed small bladder capacity and solitary lesions in the bladder wall. Thoracic computed tomography scan identified multiple solid masses in the right lung. A chemotherapy regimen against epithelial tumors (Granisetron, Carboplatin, and Gemcitabine) was recommended. At the end of the 3 courses, chemotherapy regimen was stopped because of poor general health condition. She died in 9th month of the diagnosis.

Key Words: Bladder metastasis, non-Small cell lung cancer

ÖZET

Küçük Hücreli Dışı Akciğer Kanserinin Mesane Metastazı: Nadir bir Hematüri Nedeni

Mesane tümörlerinin yaklaşık olarak %2'si metastatiktir. Akciğer kanseri sporadik olarak mesane tutulumu yapmaktadır. Altmış dokuz yaşında bayan hasta, her iki böbrek lojuna uyan bölgede ağrı, kusma ve hematüri öyküsü ile başvurdu. Hastanın sistoskopik muayenesinde azalmış mesane kapasitesi ve mesane duvarında soliter lezyonlar saptandı. Toraks bilgisayarlı tomografide sağ akciğerde multipl solid kitleler saptandı. Epitelial tümörlere karşı etkili kemoterapötikler (Granisetron, Carboplatin ve Gempitabin) önerildi. Üçüncü kürün sonunda, kemoterapi tedavisi hastanın genel sağlık durumunun kötüleşmesi üzerine durduruldu. Tanıdan sonraki 9. ayda hasta yaşamını yitirdi.

Anahtar Kelimeler: Mesane metastazı, Küçük hücreli dışı akciğer kanseri

INTRODUCTION

Bladder cancer is the fourth most common cancer in men and the ninth most common cancer in women. Approximately 2% of bladder malignancies are metastatic.¹ The lung cancer makes metastasis sporadically to the bladder.² Lung cancer is one of the most common cancers in women. Common sites of metastasis are the lymph nodes, liver, and bone. Brain, thyroid, spleen, and pancreas are the less commonly metastasis sites reported. In this report, we present a case of suspected non-small cell lung cancer referring with bladder carcinoma symptoms.

CASE REPORT

A-69-year-old female patient presented with a history of flank pain, vomiting and oliguria in August 2007. Blood test revealed creatinine 7.43 mg/dl. Pelvic computed tomography (CT) identified irregular thickness of the bladder wall (20 mm) and hydroureteronephrosis bilaterally.

Cystoscopic examination revealed a small bladder capacity and solid lesions on the bladder wall (Figure 1). Histological examination revealed unidentified metastatic bladder tumor. Tumor cells were painted positively with TTF-1, CD138, CK7 and EMA immunostains and negatively with keratin 7, keratin 20, CEA(p), pancreatin, chromogranin A,

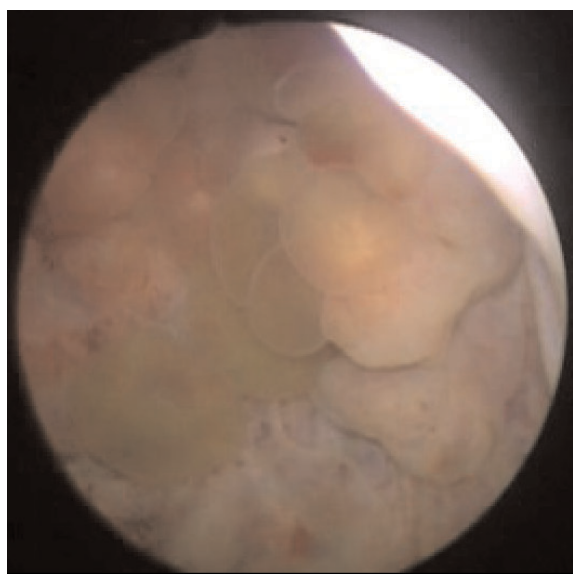


Figure 1. Cystoscopic examination revealed small bladder capacity and many solid lesions that most of them in the left bladder wall.

synaptophysin, NSE (neuron specific enolase), Cam5.2, estrogen receptor, progesterone, GCDFP, CD117, c-Kit, surfactant, vimentin, Ca19.9, beta-HCG, CK20, CD38 and thyroglobulin. Positive TTF-1 stain was proposed that the primary origin could be a lung tumor.

Diffuse metastasis in the skeletal system was detected by the bone scintigraphy. Thoracic CT scan identified multiple solid masses 1 to 3 cm in diameter in the right lung (Figure 2). No gross lesion was detected in flexible bronchoscopic examination. There was no evidence of malignancy in the cytological examination of the bronchi irrigation fluid. A CT-guided lung biopsy was recommended but the patient didn't accept it.

Chemotherapy regimen (Carboplatin 450 mg, Gemcitabine HCl 1200 mg, Granisetron 3 mg I.V, and Zoledronic acid monohydrate 4 mg) was delivered at the 1st, 8th, and the 21st days that made a single cyclus. After 3 courses of the treatment, we couldn't go on chemotherapy regimen because of poor general health condition. She died in 9 th month of the diagnosis.

DISCUSSION

Bladder cancer is one of the most common malignancies among the genitourinary cancers. More than 95% of the bladder tumors are transitional cell



Figure 2. Thoracal CT scan identified multipl solitary mass in the right lung.

carcinoma, less than 1% is adenocarcinoma and others are sarcoma, metastasis etc.³ In the genitourinary tract, bladder is the second most likely site for secondary tumor after kidneys.^{2,4,5} Metastases to the urinary bladder are less than 2% of all bladder tumors and metastases are mostly detected in advanced stages with peritoneal dissemination.⁴

Knowledge of metastatic bladder tumors is generally reported from autopsy studies, and primary sites are usually gastric cancer, malignant melanoma, breast and lung in descending frequency.¹ Caecum, pancreas, thyroid are the other primary sites that metastasize to the bladder.² Potential mechanisms contributing to the appearance of secondary bladder tumors are implantation of exfoliated cells from the bladder periphery or renal pelvis, and lymphogenous, hematogenous, or peritoneal dissemination from a distant primary source.⁶

In this case, the patient was presented with macroscopic hematuria and diffuse tumor involving whole bladder. Solid lesions in the thoracic CT were supposed to be a primary lung cancer with bladder metastasis for TTF-1 positive immunostains in histological examination. There are some studies in the literature showing association of lung cancer with bladder metastasis (such as small cell or adenocarcinoma). Bivalacqua et al. reported a non-small cell lung cancer metastasis to the bladder with paraneoplastic polyarthritis, they surgically treated the lung and didn't offer any further chemotherapy regimen.²

In our case in the third month follow up after the chemotherapy, increase the number of the bladder masses and sizes led the worsening of the bone pain and deterioration of patient's status. This chemotherapy resistance is considered to be poor prognostic factor.

This rare metastasis should be kept in mind when dealing bladder cancer patients.

REFERENCES

1. Ganem EJ, Batal JT. Secondary malignant tumors of the urinary bladder metastatic from primary foci in distant organs. *J Urol* 75: 965-72, 1956.
2. Bivalacqua T.J, Alphs H, Schaeffer E.M, Schoenberg M.P, Aksentijevich I. Paraneoplastic polyarthritis from non-small-cell lung cancer metastatic to the bladder. *J Clin Oncol* 25: 2621-3, 2007.
3. Mizutani Y, Hashimura T, Kitayama T, Toshimitsu T, Nonomura M. A case of secondary tumor, the origin (gastric cancer) of which could not be identified before autopsy. *Hinyokika Kyo* 36: 605-8, 1990.
4. Bates AW, Baithun SI. Secondary neoplasms of the bladder are histological mimics of non-transitional cell primary tumours: Clinico-pathological and histological features of 282 cases. *Histopathology* 36: 32-40, 2000.
5. Bates AW, Baithun SI. The significance of secondary neoplasms of the urinary and male genital tract. *Virchows Arch* 440: 640-7, 2002.
6. Antunes AA, Siqueira TM Jr, Falcão E. Vesical metastasis of gastric adenocarcinoma. *Int Braz J Urol* 30:403-5, 2004.

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