Transitional cell carcinoma with glandular differentiation metastatic to the inguinal lymph node from the urinary bladder

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ABSTRACT

Metastasis to the inguinal lymph nodes is a rare event in bladder cancer. In general, tumors at the metastatic foci are histologically similar to the primary. We report a metastatic adenocarcinoma in the inguinal lymph node from a primary, pure transitional cell carcinoma after radical cystectomy.

Key words: Adenocarcinoma, inguinal lymph node, transitional cell carcinoma

INTRODUCTION

A bladder cancer composed of three different histological components: Transitional cell carcinoma (TCC), squamous cell carcinoma (SCC) and adenocarcinoma, is very rare.[1] Bladder tumors most frequently metastasize to pelvic lymph nodes. In addition, a sole inguinal lymph node metastasis from a urinary bladder carcinoma is an uncommon event.[2] To the best of our knowledge, four cases of inguinal lymph node metastasis of a bladder cancer have been described in the literature. We present a case with inguinal node metastasis in the early period after radical cystoprostatectomy.

CASE REPORT

A 58-year-old male patient was admitted to our clinic with complaints of hematuria and right flank pain. Contrast-enhanced computed tomography (CT) revealed diffuse bladder wall thickening and grade 2 hydroureteronephrosis in the right kidney. Transurethral resection of the bladder tumor was reported as a high-grade (G3), muscle-invasive TCC (pT2) transitional cell carcinoma. No metastasis was detected on CT and magnetic resonance imaging (MRI). The patient underwent radical cystoprostatectomy with a Studer ileal bladder substitute for orthotopic diversion with bilateral extended pelvic lymph node dissection. Histopathology confirmed muscle-invasive TCC (pT2) [Figure 1]. Surgical margins were free and lymph node metastasis was not detected. No complications occurred and the right kidney hydroureteronephrosis decreased.

Six months after cystoprostatectomy, the patient was admitted with complaints of pain in the left inguinal region. Ultrasonography (USG) showed a left inguinal mass 38 cm × 25 cm × 26 mm in diameter. In addition, pelvic MRI showed a mass 1.5 cm in diameter in the left inguinal region. Positron emission tomography (PET) showed increased fluorodeoxyglucose (FDG) uptake in the left inguinal area and the maximum standardized uptake value was 9 (SUV max: 9). Left inguinal lymph node excision was planned but curative resection could not be performed because of dense adhesions to the adjacent vital structures, including the left femoral vein. Excisional biopsy was taken from the left inguinal region which was reported as adenocarcinoma, including transitional cell variants [Figure 2]. The patient underwent gastrointestinal evaluation to search for the primary lesion of adenocarcinoma; however, no primary site could be identified. Carcinoembryonic antigen (CEA) and carbohydrate antigen (CA) 19-9 were within the normal range. Tumor cells were positive for Cytokeratin CK7 [Figure 3] and negative for CK20. Based on these
immunohistochemical findings, it is unlikely that the tumor had originated in the gastrointestinal tract. After four courses of chemotherapy with a combination of cisplatinum, mitomycin-c, etoposide and tegafur-/uracil,[3] the metastatic tumor remained unchanged. Radiotherapy was also performed, but achieved minimal remission.

**DISCUSSION**

Bladder tumors most commonly metastasize to the pelvic lymph nodes. The paravesical, obturator, external iliac and presacral lymph node metastases occur in 16%, 74%, 65% and 25% cases respectively. Inguinal lymph node metastasis from a urinary bladder carcinoma is an uncommon event.[4] To the best of our knowledge, only four cases have been reported previously. Further, a mixture of adenocarcinoma, SCC and TCC in a bladder carcinoma is very rare. Urothelial mixed carcinomas have been described as neoplasms that have two or more different histological components.[5] Kunze and Francksen reported that either adenocarcinoma or SCC may arise metaplastically from a pre-existing TCC.[6]

CK intermediate filaments are known to have 20 subtypes. These subtypes have different molecular weights and show different expressions in various cell types and tumors.[7] Monoclonal antibodies to specific CK subtypes have been used in an attempt to classify tumors according to the site of origin. CK7 is expressed in a wide variety of epithelia, including the lung, breast, endometrium, urothelium, stomach, pancreatobiliary tract, skin and adnexal glands. CK20 is distributed predominantly in the carcinomas of the gastrointestinal and pancreatobiliary tracts. The combination of CK7 and CK20 immunoprofiling has been helpful in identifying the primary site of origin of the metastatic tumor. A CK7-negative/CK20-positive phenotype is often associated with carcinomas of colorectal origin, whereas a CK7-positive/CK20-negative phenotype is seen in a wide variety of carcinomas, including the lung, urethelium and female genital tract.[8,9] In the present case, immunohistochemical staining was positive for CK7 and negative for CK20. These results ruled out any possible metastases from adenocarcinoma of the gastrointestinal tract. The PET scan also did not detect any primary focus in the lung.

The advantage of using FDG PET is that this technique allows us to visualize metabolically active but small superficial or possibly submucosal lesions, which are invisible on both clinical examinations and conventional imaging.[9] An SUV for malignancy above 2.5-3.0 is considered to be sensitive and specific.

Generally, the major origins of inguinal node metastases are the lower extremities, the surfaces of the genitalia, the anus, the anterior urethra and invasive or post-operative testicular cancer.[10] Occasionally, vesical wall perforation during TUR may metastasize to an inguinal node.[11]

Possible metastatic pathways from a bladder cancer to the inguinal node are (i) metastasis from the bladder,
(ii) metastasis from a recurrent or coexisting tumor in the urethra, (iii) metastasis from an intrapelvic recurrence and (iv) secondary lymphatic metastasis from a previous node metastasis. These patients are resistant to chemotherapy and radiation therapy and they have a short survival. In our case, neither bladder wall perforation during TUR nor pathological lymph node metastasis was evident. To the best our knowledge, no other case of TCC metastasis to the inguinal lymph node with an adenocarcinoma component from the primary urothelial carcinoma of bladder has been described in the literature. Thus, it was considered that micrometastasis from the primary site occurred after cystoprostatectomy.

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