Lymphoepithelioma-like carcinoma of the ureter: a rare presentation, synchronous with conventional urothelial carcinoma

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RENSING AJ, MOHAPATRA A, POTRETZKE AM, SEHN JK, FIGENSHAU RS. Lymphoepithelioma-like carcinoma of the ureter: a rare presentation, synchronous with conventional urothelial carcinoma. *Can J Urol* 2017;24(1):8673-8675.

Lymphoepithelioma-like carcinoma (LELC) is a rare finding in the upper urinary tract. The presenting clinical findings mimic those of other more common upper-tract tumors, such as urothelial carcinoma. Preoperative imaging has not been shown to reliably predict the diagnosis of LELC. This tumor can be misdiagnosed as a reactive inflammatory lesion or lymphoma if the proper immunohistochemical stains for cytokeratin are not used.

Key Words: urothelial carcinoma, ureter, kidney, flank pain

Introduction

Lymphoepithelioma (LE) is an undifferentiated carcinoma of the nasopharynx characterized by a prominent benign reactive lymphoid infiltrate. LELC is histologically similar to nasopharyngeal LE and is described as a distinct variant of urothelial carcinoma (UC) in the World Health Organization Classification of Tumours.[1] Most cases of LELC within the urinary tract have been found in the bladder. Those involving the ureter and renal pelvis are considered especially rare.

Accepted for publication November 2016

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Case report

A 74-year-old Taiwanese female was referred to the urology clinic with a several-year history of intermittent right flank pain, urinary frequency, and nocturia. Previous work up was performed 2 years prior in Taiwan and included a computed tomography (CT) scan and diuretic renogram. The CT showed right-sided hydroureteronephrosis and a simple cyst in the right kidney. The renal scan demonstrated normal clearance bilaterally.

Further work up included a magnetic resonance urogram that showed circumferential wall thickening and enhancement, along with narrowing of a 1.5 cm segment of the right proximal ureter. Worsening hydroureteronephrosis was also noted. Pyeloureteroscopy revealed a mass in the right renal pelvis, which was biopsy-positive for papillary UC. The ureter was

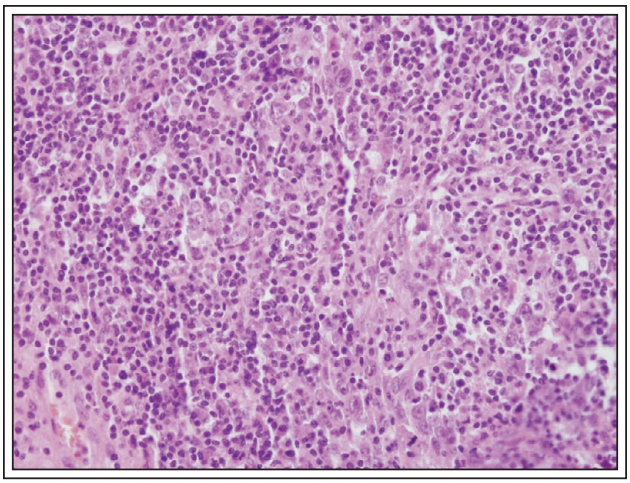

Figure 1. Sections of the ureteral lesion showed inconspicuous invasive tumor cells in a dense lymphoplasmacytic infiltrate, characteristic of the lymphoepithelioma-like variant of urothelial carcinoma. Original magnification: 400x.

tortuous, but no concerning lesions were identified. The patient underwent an uncomplicated, laparoscopic right nephroureterectomy with a hilar lymph node dissection. Also, as part of the periureteral dissection, lymph nodes with a suspicious, matted appearance were removed.

Histologic examination showed three distinct carcinomas. The distal ureter contained UC with micropapillary features, invading muscularis propria; three lymph nodes harbored metastases from the distal UC (pT2N2MX). The proximal ureter contained a second lesion, with inconspicuous invasive tumor

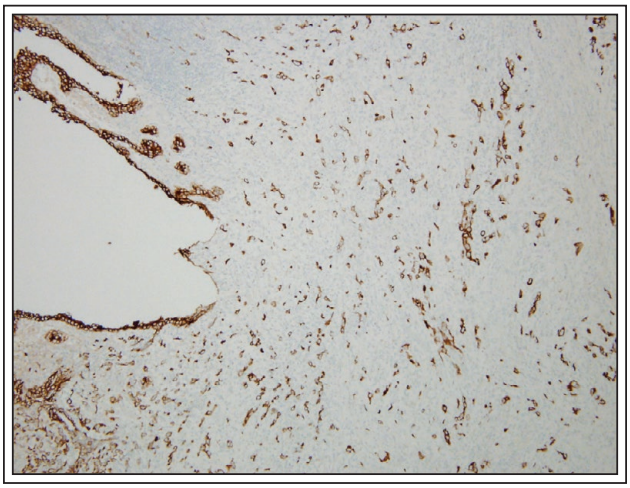

Figure 2. A keratin immunostain highlights the overlying urothelium and invasive carcinoma cells. Original magnification: 100x.

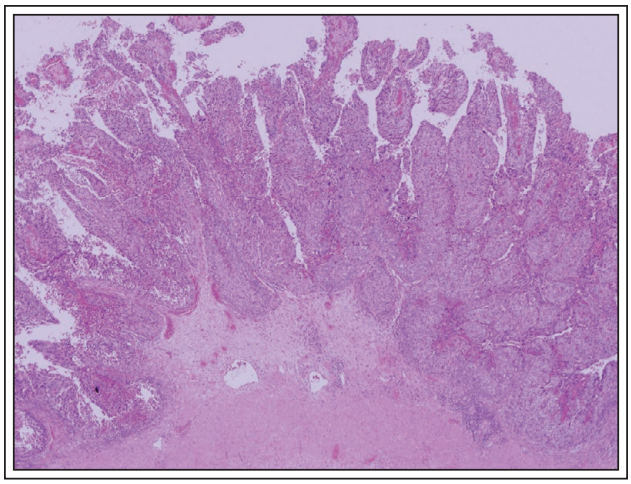

Figure 3. Sections of the renal pelvic lesion showed high-grade papillary urothelial carcinoma. Original magnification: 40x.

cells in a dense lympohoplasmacytic infiltrate, as is characteristic of LELC, Figure 1. The tumor cells were highlighted by cytokeratin (CAM5.2) immunostaining, Figure 2. The LELC showed transmural invasion and involvement of periureteral soft tissue, with metastasis to one lymph node (pT3/N1/MX). Lastly, the renal pelvis contained multifocal carcinoma in situ and a high-grade papillary UC invasive into the lamina propria (pT1N0MX), Figure 3.

Discussion

LE is an undifferentiated epithelial tumor with a prominent lymphocytic infiltrate. It is commonly encountered in the nasopharynx of Asian patients, and in this location, LE has been linked to the Epstein-Barr virus (EBV).[2,3] LELC is histologically similar to LE, but the term connotes a location outside of the nasopharynx. Further, LELC has a less well-defined association with EBV. Cases of LELC have been described in the thymus, thyroid, salivary glands oral cavity, trachea, lung, skin, breast, stomach, gallbladder, liver, uterine cervix, gynecologic system, and urinary tract.[3,4] Within the urinary tract, LELC is most commonly seen in the bladder,[3,5] with rare reports of its presence in the renal pelvis, ureter, prostate, and urethra.

Chalk et al described the first case of LELC of the ureter; the present case marks the eleventh in the literature.[6,7] Hematuria is the most common reported symptom of urinary LELC.[8] This tumor can be misdiagnosed as a reactive inflammatory lesion or lymphoma if proper immunohistochemical stains for cytokeratin are not used. LELC often manifests in

advanced (T2-T3) stages and occurs predominantly in males.[7] Given the paucity of reported cases, the prognosis is unclear. However, a limited report would suggest that for nonmetastatic LELC of the upper tract, nephroureterectomy is curative.[4] Finally, small studies have suggested LELC of the bladder may be sensitive to platinum-based chemotherapy. Thus, patients with disseminated, residual, or recurrent LELC may benefit from multi-agent chemotherapy.[9-11]

Conclusion

LELC of the ureter is a diagnosis distinct from UC. The diagnosis depends on a high level of suspicion of both the urologist and pathologist; a misdiagnosis may be rendered in the absence of appropriate cytokeratin stains. LELC often presents as advanced, aggressive disease. Thus, after extirpative treatment, close surveillance is warranted. □

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