Primary carcinoid tumor of the bladder

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Transitional cell carcinoma is the most common type of bladder cancer in the United States. This case report discusses the finding of primary bladder carcinoid tumor (also called well-differentiated neuroendocrine tumor) in a woman with gross hematuria. With only 15-20 reported cases, primary bladder carcinoid is rare and the approach to treatment is unclear. There have been two muscle-invasive cases reported which required more extensive treatment plans. The patient presented in this case underwent complete transurethral resection of the tumor with the recommendation of surveillance cystoscopy every 3 months.

Key Words: transitional cell carcinoma, bladder cancer

Introduction

The American Urological Association recommends that cystoscopy be performed on all patients over the age of 35 with asymptomatic microhematuria to rule out bladder cancer.[1] Bladder cancer is the sixth most common cancer in the United States, with almost 80,000 new cases in 2017.[2] Transitional cell carcinoma is by far the most common type of bladder cancer, accounting for almost 90% of bladder malignancies.[3] In this case, we discuss the rare finding of a primary, pure carcinoid tumor of the bladder.

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Case report

The patient is an 83-year-old female who presented to the urology clinic with a chief complaint of dysuria and gross hematuria. CT urogram was performed prior to presentation and showed no evidence of filling defect to suggest upper tract disease. The patient underwent cystoscopy in clinic and was found to have a 2 cm papillary lesion at the bladder neck. TUR was recommended to the patient, but she elected to wait and have a repeat cystoscopy in 3 months.

A repeat cystoscopy was performed 4 months later and the lesion was found to have grown to 2.5 cm, Figure 1. At this time the patient agreed to undergo transurethral resection (TUR). TUR was subsequently performed without complication. The patient also underwent CT scan of the abdomen and pelvis, which

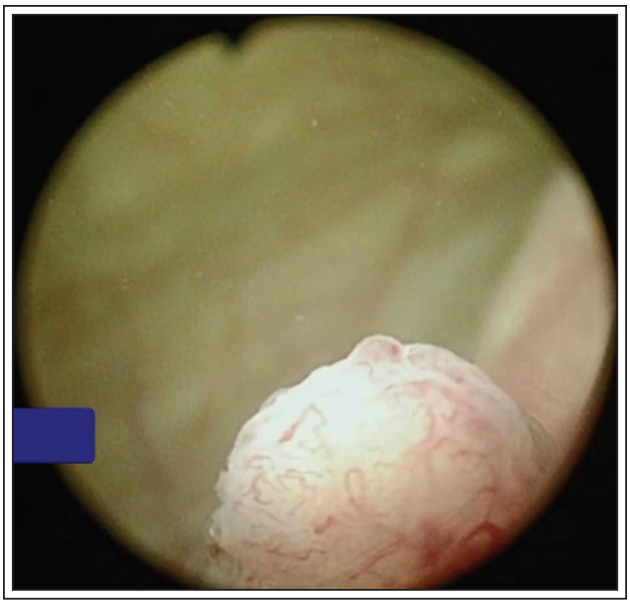

Figure 1. Cystoscopic view of bladder tumor.

displayed no signs of metastatic disease. The patient's postoperative course was uncomplicated.

Sections of the bladder biopsy showed a tumor with prominent pseudoglandular pattern filling the lamina propria. Adjacent and admixed nests of cystitis cystica et glandularis were present. Tumor nests were comprised of plump, bland, cuboidal to columnar cells with round nuclei, fine chromatin and inconspicuous nucleoli. Scattered cells showed basally located eosinophilic granules resembling Paneth cells of the gastrointestinal tract, Figure 2. Focal nuclear enlargement with mild atypia were present; however, mitotic activity and

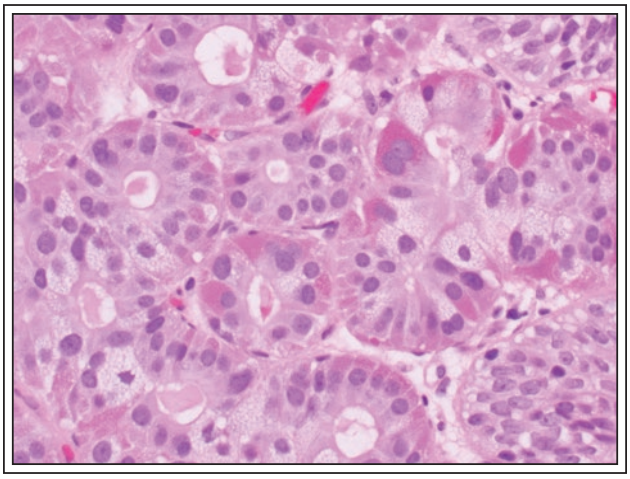

Figure 2. Pseudoglands with scattered brightly eosinophilic Paneth-like cells (hematoxylin & eosin, 40X).

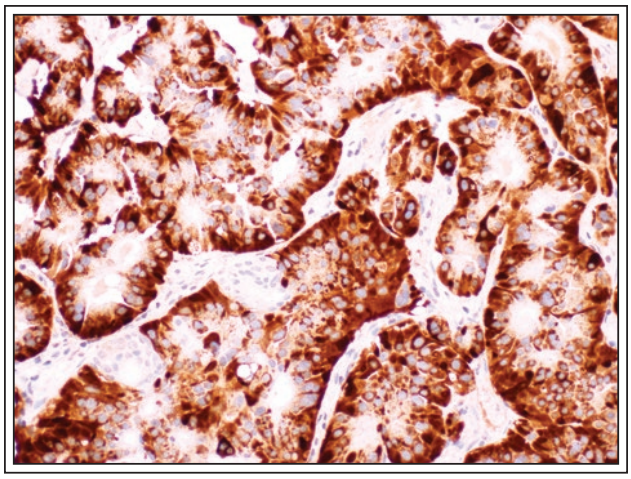

Figure 3. Strong, diffuse positivity for neuroendocrine markers (chromogranin, 20X).

necrosis were not identified. No admixed areas of traditional urothelial carcinoma or small cell carcinoma were identified. Immunohistochemistry for chromogranin, Figure 3, and synaptophysin were strongly and diffusely positive in tumor cells, supporting the diagnosis of carcinoid tumor.

The patient's treatment was discussed at tumor board with pathology, oncology, and urology present. The pathology team suggested that carcinoid tumors could not be risk stratified in the same manner as urothelial tumors, because they are typically subepithelial, non-infiltrative, and usually have excellent outcomes. The multidisciplinary team decided that given the patient's age, the small size of the bladder tumor, and the complete resection of the tumor, the patient should undergo follow up cystoscopy every 3 months. No further treatment was currently deemed necessary.

Discussion

With only approximately 15-20 reported cases of pure, primary bladder carcinoid (also called well-differentiated neuroendocrine tumor), this patient's tumor is exceedingly rare.[4] Carcinoid tumors are low grade tumors derived from neuroendocrine cells and are most commonly found in the lung and gastrointestinal tract. Patients with metastasis to the liver can present with carcinoid syndrome and require a multimodal approach to treatment. In patients who do not have metastatic disease, surgical resection can be curative.[5]

It is estimated that 25% of patients with carcinoid tumor of the bladder will have regional lymph node

or distant metastases. This percentage, though, is based on studies that include mixed carcinoid tumors, which are known to be aggressive in a manner that is consistent with the non-carcinoid portion of the tumor.[6] This makes prognosis unclear because there are so few cases of primary, pure bladder carcinoid (as opposed to mixed carcinoid tumors). Of note, previous case reports have not shown carcinoid syndrome in patients with primary bladder carcinoid.[7] Furthermore, in the largest current study of carcinoid bladder tumors (6 patients), there was no association with multiple endocrine neoplasia syndromes.[4] Importantly, in this retrospective study there were no recurrences with mean follow up 26 months.

While unusual, bladder carcinoid can be muscle-invasive, causing diagnostic and prognostic issues. One muscle-invasive case in the literature was treated with radical cystoprostatectomy, but then was found to have new coin secondary lesions located in the lungs on a 2 month follow up chest x-ray. He then underwent two cycles of chemotherapy followed by radiotherapy, which led to a stable follow up 2 months later.[8] A separate patient with muscle-invasion had only transurethral resection with follow up cystoscopy every 3 months. The second follow up cystoscopy at 6 months showed a 1 mm-2 mm carcinoid tumor located at the previous resection site.[9] In our patient, there was no muscularis propria present in the tissue sample, so muscular invasion cannot be ruled out, though it was deemed unlikely given the small size of the tumor, lack of mixed pathology, and negative deep margin. Based on these findings and the lack of metastases on her CT, the tumor board felt that she did not require aggressive therapy for her primary bladder carcinoid, nor a repeat TURBT at this time. □

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