



Oncology

A rare case of metastatic sigmoid adenocarcinoma to the ureter

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A B S T R A C T

Colorectal cancer is a very common disease process, as is ureteral obstruction, but the two are typically mutually exclusive. The case report presented details a 35-year-old male with left sided flank pain and hydronephrosis caused by metastatic spread of previously diagnosed and treated sigmoid adenocarcinoma. About two years previously, he had been diagnosed with Stage IV, T4a sigmoid colon cancer with liver metastasis and had resection of his primary tumor as well as metastatic sites and several rounds of chemotherapy. This case is an example of the different ways that cancer can grow, evading detection by spreading in atypical patterns.

Intro

Colorectal cancer is one of the most common malignancies in the United States. In 2018, there were 179,771 cases diagnosed in North America and 64,121 deaths attributed to that cancer.¹ This malignancy can be discovered in a variety of ways, based on the patient's presentation. Symptoms from a local tumor include a change in bowel habits, rectal bleeding, an abdominal mass, anemia, or abdominal pain.^{2,3} This cancer could also be found on routine screening of asymptomatic patients.^{2,3}

Hydronephrosis is a swelling of the collecting system of the kidney and ureter. This is commonly from an obstruction, such as extrinsic compression, ureterolithiasis, or bladder outlet obstruction. Most obstructions caused from calculi can be appreciated on computed tomography (CT) scan. Bladder outlet obstruction can be evaluated with a physical exam, imaging, or cystoscopy.

After review of the literature, this represents an extremely rare case of metastatic spread of sigmoid adenocarcinoma to the ureter. In the past 10 years, this represents the first documented case in the United States and only the fifth documented case in the world.

Case report

A 35 year old male presented to the emergency department with a chief complaint of left sided flank pain that had started the day prior. The patient's surgical history was significant for a combined resection of liver metastasis, omental metastasis, and primary colorectal adenocarcinoma that had presented as Stage IV. The patient had a paternal family history of colon and prostate cancer. The patient was a current smoker.

Upon review of prior hospital records, the patient was noted to have

visited his primary care physician with the chief complaint of constipation and bleeding with bowel movements. He was referred to gastroenterology who discovered irritated internal and external hemorrhoids on anoscopy. He was started on treatment but returned one month later with increased bleeding with bowel movements. Colonoscopy revealed a circumferential mass at the level of the recto-sigmoid colon. Biopsy sites came back as low grade invasive adenocarcinoma. At this point, the patient was referred to surgical oncology. He had a Portacath placed and was started on chemotherapy (FOLFOX and Avastin).

About four months after initiating chemotherapy, the patient had resection of his primary tumor as well as any noted metastasis. Pathology came back as low grade colonic adenocarcinoma with negative margins with metastatic colonic adenocarcinoma in the left lateral and caudate lobes of the liver. He was staged as T4a, N0, M1a. Following surgical resection, the patient continued chemotherapy infusions (FOLFOX) for three additional months. The patient had a negative repeat colonoscopy about one year later.

In the emergency department almost two years after his initial evaluation, patient had a CT of his abdomen and pelvis to rule out a calculus and was found to have mild left sided hydronephrosis with a transition point near his abdominal pelvic junction and a 1.1 cm × 0.6 cm soft tissue abnormality, but no ureteral calculi. A repeat CT with contrast one week later confirmed the patient's hydronephrosis as well as a spiculated soft tissue density. A PET scan was ordered showing abnormal soft tissue in the left ureter at the level of the pelvic inlet and inferior mesenteric vein resection site with increased density and increased fludeoxyglucose uptake.

Two weeks after the PET scan, the patient was taken to the operating room for cystoscopy, left retrograde pyelogram, ureteroscopy and placement of a double J stent [Fig. 1]. During the operation, urine was

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Fig. 1. Retrograde pyelogram showing extrinsic narrowing.

saved for cytology and found to be negative for urothelial carcinoma. On cystoscopy, the bladder mucosa was without abnormality. Left retrograde pyelogram was then completed showing a 1–2 cm extrinsic narrowing of the proximal portion of the distal third of the ureter at the true pelvis. Ureterscopy confirmed the presence of an extrinsic mass effect 1.5 cm in length without intrinsic tumor.

About one month later, the patient was taken back to the operating room for a DaVinci assisted exploration of his ureter and excision of presumed metastatic disease. Initial inspection of the abdominal cavity was without abnormality. The inspection of the ureter revealed a dense adhesion just proximal to the distal third [Fig. 2]. Ureteral lysis was performed and inspected to find a 2 cm area of tumor. A specimen was obtained and sent to pathology for frozen sections, confirming neoplasia [Fig. 3]. The abnormal portion of the ureter was then excised and the entire specimen was sent to pathology for analysis. The ureter was

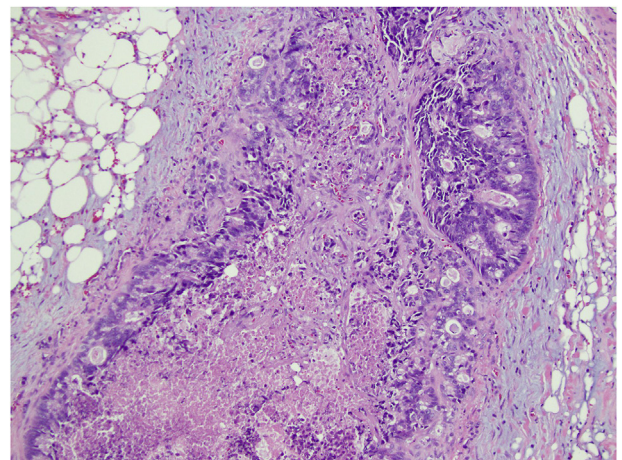


Fig. 3. Histologic image from pathology showing adenocarcinoma in excised ureteral portion.

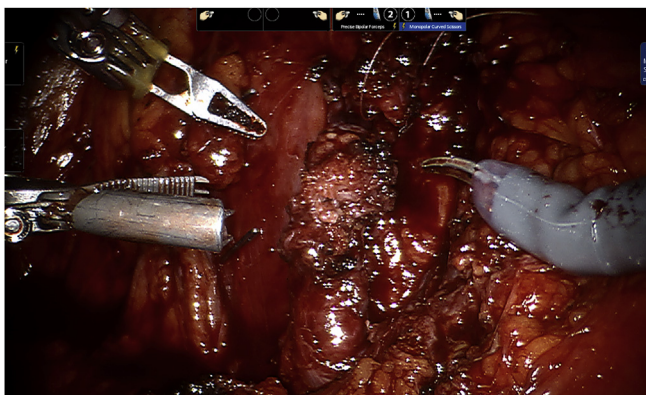


Fig. 2. DaVinci laparoscopic image of ureteral tumor.

spatulated and re-anastomosed with interrupted 4-0 Vicryl sutures. In addition, an indwelling ureteral stent was placed.

Patient had an expected post-operative course and was discharged from the hospital on post-operative day 1. Pathological analysis of the excised portion of the ureter revealed adenocarcinoma on 5 of 7 sections analyzed. This was consistent with a metastasis of the patient's previously diagnosed recto-sigmoid adenocarcinoma.

The patient is currently undergoing adjuvant radiation therapy as well as oral chemotherapy per oncology recommendations. His most recent retrograde pyelogram was without abnormality.

Discussion

Colorectal cancer is one of the most common cancers in the world, but a case of metastatic spread to the urinary system and in particular, the ureter is rare. Less than five cases have been reported in the past ten years. When hydronephrosis as a result of a ureteral mass is found, the pathologist would more likely find urothelial carcinoma, as up to 90% of upper urinary tract cancers are found to be urothelial cancer.⁴ In this patient, however, almost two years after his initial evaluation, a 2 cm metastatic adenocarcinoma of the colon was found in the left ureter. The patient is currently undergoing treatment and the outcome is undetermined at this time. The patient will continue to be followed with serial imaging to assure no tumor recurrence.

With this case, as well as any oncologic case, it is always important to remember the diverse patterns of metastatic spread. It is imperative to have a low threshold for specialist evaluation with any newfound

abnormalities in patients with a remote history of malignancy.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.eucr.2019.100972>.

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