

Metastatic Prostate Cancer to the Duodenum: A Rare Case

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ABSTRACT

Prostate cancer is the third most common cancer in man. About 1 in 6 males developed prostate cancer and 1 in 35 males die of this disease. Prostate cancer behavior ranges from microscopic tumors to aggressive cancer with metastatic potential. While metastasis to bone is relatively common, prostate cancer rarely metastasizes to the cecum, pituitary gland, small bowel, maxillary sinus and skin. Our case report presents a rare presentation of metastatic prostate cancer to the duodenum. Our search of the literature found only 2 cases of prostate metastases to duodenum published from 1966 to the present. To our knowledge this is the third case of metastatic prostate cancer presenting with duodenal metastasis. Although it is rare but in symptomatic patients small intestine metastasis should not be ignored with advanced prostate cancer. The case demonstrates a novel presentation of a common malignancy, and should raise awareness in clinicians and radiologists that prostate cancer can present with distant metastases in absence of any local lymphadenopathy.

Keywords: Duodenum, prostate cancer, endoscopy

Introduction

Prostate cancer is the third most common cancer in man and is the most commonly encountered malignancy in clinical practice. In the US, there were 27,360 deaths attributed to prostate cancer and 192,280 new cases diagnosed in 2009. About 1 in 6 males develop prostate cancer and 1 in 35 males die of this disease.^[1] Its behavior ranges from microscopic tumors to aggressive cancer with metastatic potential. Approximately 20% of patients present with metastatic disease. While metastasis to bone is relatively common, prostate cancer rarely metastasizes to the cecum, pituitary gland, small bowel, maxillary sinus, or skin.^[2-6] The case reported here is a rare presentation of metastatic prostate cancer to the duodenum. Our search of the literature published from 1966 till date yielded only two cases of prostate metastases to the duodenum.^[7] Metastasis to the duodenum is an unusual phenomenon of prostate cancer, but it can elicit several gastrointestinal (GI) complications such as bleeding or obstruction. We present a case of metastasis of prostate cancer to the duodenum.

Case Report

A 42-year-old man with history of hypertension, metastatic prostate carcinoma (bone metastasis) diagnosed in March 2007, lumbar disc herniation since 1998, chronic kidney disease, and obstructive uropathy status post bilateral nephrostomy was referred by his primary care physician to the gastroenterology clinic for evaluation of abdominal pain and intermittent blood in stool. Patient had complaints of intermittent nausea, vomiting, and abdominal pain. His pain was epigastric, lasting about 10 min and precipitated by food intake. Over-the-counter ranitidine provided mild relief. He denied any melena, but reported red blood with wiping but not mixed in the stools. Patient did not have any allergy to medications. He had a 24 pack year history of smoking with one can of alcohol use per week. Patient quit alcohol and smoking in 2007 when his cancer was diagnosed. Patient's medication list is as follows: Bicalutamide, Oxybutinin, Oxycodone/acetaminophen, Fentanyl patch, and multivitamins. Patient's vitals were stable and physical exam was significant for bilateral nephrostomy tubes without any local infections and mild epigastric tenderness without any guarding, rebound, or rigidity. Patient's computed tomography (CT) scan of abdomen did not show any evidence of GI involvement as metastasis. His laboratory findings were positive for microcytic anemia and stool was positive for occult blood. After further laboratory analysis

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revealed iron deficiency anemia, patient was scheduled for an upper endoscopy and colonoscopy. Upper endoscopy [Figure 1] revealed a normal esophagus and gastroesophageal junction. In the stomach, there was mild erythematous antral mucosa without erosions or ulceration from which biopsies were taken. The duodenum appeared normal, but biopsies were routinely taken to evaluate for celiac disease. Colonoscopy revealed a diminutive polyp in the sigmoid and internal hemorrhoids. Biopsy of colonic polyp revealed tubular adenoma. Biopsies of the antrum revealed reactive gastropathy with *Helicobacter pylori* infection. The duodenal biopsies [Figures 2 and 3] showed no evidence of celiac disease, but instead revealed lymphangitic carcinoma consistent with prostatic adenocarcinoma (high grade type). Patient was treated for *H. pylori* infection with triple antibiotic regimen on a follow-up visit and had continued follow-up with oncology for chemotherapy for his cancer.

Discussion

Prostate cancer is the second most common cancer in males.^[1] The most common metastatic targets for prostate cancer include lymph nodes, bone, lung, and liver.^[8] As the survival period of patients with prostate cancer is prolonged, some unusual metastatic sites of prostate cancer have been identified. However, there have been no cases of metastasis to the small intestine except for two previous case reports in 2001 and January 2009.^[5,7] According to a previous survey, the lymphatic drainage of the prostate determines the location of the initial metastases, but the subsequent widespread metastases probably originate from sentinel nodes.^[9] Duodenal metastases from prostate carcinoma are rare. As per our knowledge, only two cases of prostate metastases to duodenum have been published from 1966 till date.^[7]

A review of the literature reveals few studies of patients with prostate cancer and metastases to the small bowel. Metastatic tumors to the GI tract are rare. Disease can either be intrinsic within the bowel wall or extrinsic in the surrounding tissues. The most common primary tumors to metastasize to the duodenum are lung cancer, renal cell carcinoma, malignant melanoma, and breast cancer, especially of the lobular subtype. Isolated case reports exist of obstruction secondary to metastases from ovary, prostate, colon, cecum, synovial sarcoma, germ cell tumor of the testis, and other tumors of the genital tract. Extrinsic malignant obstruction of the duodenum commonly results from contiguous spread from adjacent organs such as the pancreas and gallbladder. Metastatic spread from prostate cancer to the GI tract is uncommon and tends to be a local manifestation involving the rectum,^[5-7] although metastases to the duodenum and esophagus have been reported in an autopsy study.^[10] In all these cases, the GI spread was a manifestation of disease recurrence and not a presenting feature. Extensive abdominal involvement is discovered at autopsy in one-third of cases. However, involvement of the GI lumen alone is exceptional. The common manifestations are abdominal pain, nausea, vomiting, and GI bleeding. Diagnosis of metastatic lesions of the duodenum may be problematic. The small intestine may show a mass lesion, mucosal defect, or

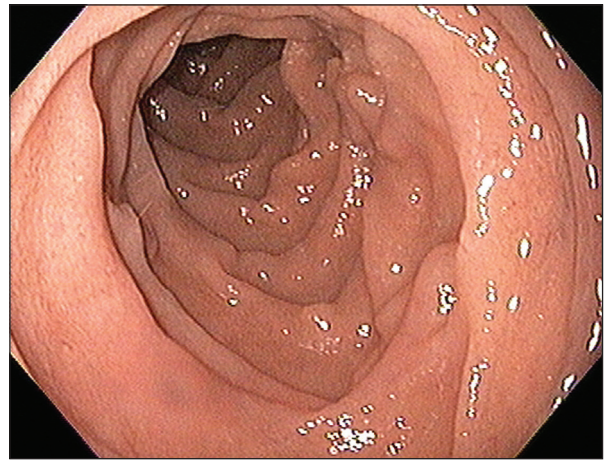


Figure 1: Duodenum endoscopic view

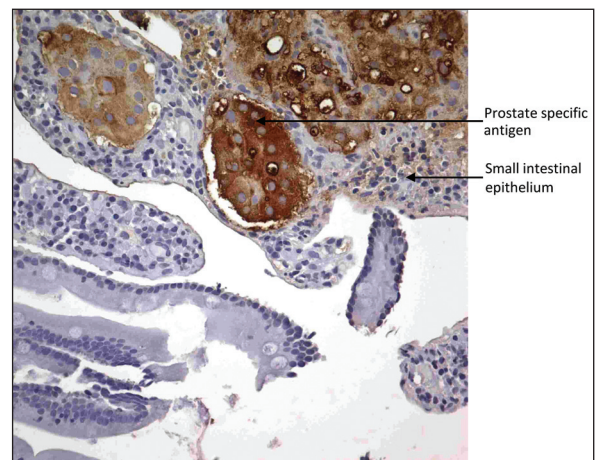


Figure 2: Biopsy 1

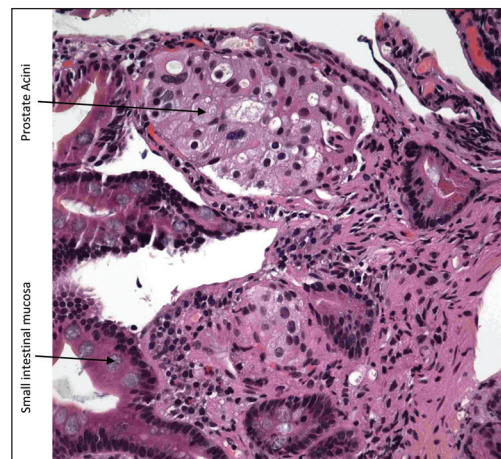


Figure 3: Biopsy 2

intussusceptions, but is often unremarkable. Endoscopic evaluation of the GI tract provides an alternative to radiographic evaluation and should be considered when radiographic diagnostic studies are unrevealing.^[11] However, we must keep in mind that detailed small intestinal studies should be considered if the cause of anemia or occult blood cannot be ascertained.

Clinical diagnosis can be difficult due to nonspecific symptoms like nausea, vomiting, dyspepsia, weight loss, and epigastric pain, all of which can be attributable to chemotherapy, radiotherapy, or liver metastasis. An endoscopic diagnosis can be difficult due to implantation of the metastatic cells in the submucosa. Late diagnosis of GI metastasis is common, and so is the presence of concurrent metastases at the time of the diagnosis. In McLemore's study of 23 patients with GI metastases, 12 underwent palliative surgery with a median survival of 44 months compared to the median survival of 9 months of patients who were not treated surgically. Surgery did not affect the survival of patients with carcinomatosis.^[12,13] Perioperative mortality has decreased considerably, and the question remains whether surgery should be considered as palliative therapy, and not only for symptomatic patients.

Conclusion

In conclusion, this is the third description of metastatic prostate cancer presenting with duodenal metastasis. Although it is rare, in symptomatic patients with advanced prostate cancer, small intestine metastasis should not be ignored. We have reported an unusual case of a patient with metastatic duodenal tumor caused by primary prostate cancer. The case demonstrates a novel presentation of a common malignancy, and should raise awareness among clinicians and radiologists that prostate cancer can present with distant metastases in the absence of any local lymphadenopathy.

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