

# Synchronous Metastasis of Prostate Adenocarcinoma to the Stomach and Colon: A Case Report

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## Abstract

**Context:** Prostate cancer is the leading cancer diagnosis in males. The most common metastatic site of metastases in patients with prostate cancer is the axial skeleton and local lymph nodes. Rarely has there been a description of metastatic prostate cancer to the stomach, esophagus, small bowel, and rectum. **Case Report:** We report an unusual case of a patient who was diagnosed with prostate cancer with synchronous metastasis to both the stomach and sigmoid colon. A 71-year-old African American man with a history of prostate cancer was admitted with a hemoglobin level of 6.1 g/dl, which had decreased from the baseline value of 8 g/dl. He underwent an esophagogastroduodenoscopy, which revealed a nodule in the fundus of stomach; a biopsy of the nodule was done. The patient also underwent a sigmoid polypectomy. Both surgical specimens were histopathologically consistent with metastatic adenocarcinoma of prostatic origin. **Conclusion:** To the best of our knowledge, this is the first case report in literature of synchronous metastasis of prostate cancer to both the stomach and sigmoid colon.

**Keywords:** Colon, Metastatic prostate cancer, Synchronous, Stomach

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## Introduction

Prostate cancer is the leading cancer diagnosis in males, with an estimated incidence of 241,740 in 2012 and total deaths estimated to be 28,170 in 2012.<sup>[1]</sup> Most common locations of metastases of prostate cancer are the axial skeleton and local lymph nodes.<sup>[2]</sup> There are cases in the medical literature that describe prostate cancer metastasizing to the lungs, liver, and adrenals.<sup>[2]</sup> There are very few case reports of metastasis of prostate cancer to the gastrointestinal system.<sup>[2-10]</sup> This is, to our knowledge, the first case report of a patient with synchronous metastasis of prostate adenocarcinoma to the stomach and colon.

## Case Presentation

A 71-year-old African American man with a medical history significant for hypertension, prostate cancer treated with surgery and radiation therapy over 10 years ago, diabetes mellitus, and a bilateral knee arthroplasty for severe degenerative arthritis was admitted with complaints of weakness and dizziness. He stated that over the past few weeks, he experienced poor activity tolerance. He had to use tables and walls for support while walking. He denied any symptoms of nausea, vomiting, abdominal pain, melena, changes in bowel habit, bright red blood per rectum, or hematuria. Physical examination revealed a thinly built male in no acute distress with pale conjunctiva, otherwise essentially unremarkable. Vitals signs showed a temperature of 97.8, pulse 86, blood pressure 147/88 mm/Hg, and respiratory rate 16. Laboratory data revealed hemoglobin of 6.1gm/dl, hematocrit of 18.3%, platelet count of 196,000/ $\mu$ l, white blood cell (WBC) count of 4,000/ $\mu$ l, mean corpuscular volume of 80  $\mu$ m<sup>3</sup>, red cell distribution width of 21.6%, reticulocyte count of 2.1%, blood urea nitrogen (BUN) of 12 mg/dl, creatinine of 0.75 mg/dl, prothrombin time of 15 sec, international normalized

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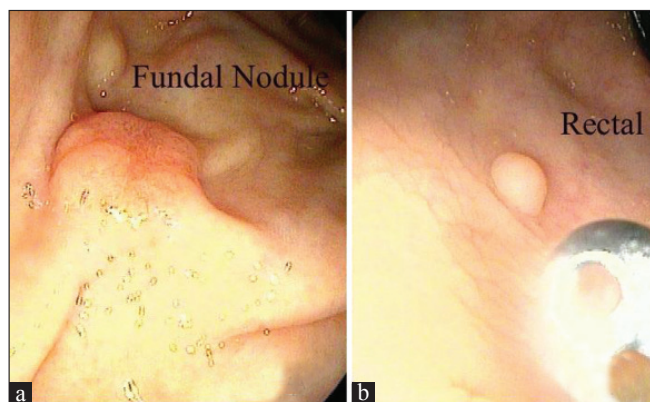
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ratio of 1.2, activated partial thromboplastin time (APTT) of 38.7 sec, and prostate-specific antigen (PSA) of >150 ng/ml. Iron studies revealed serum iron level of 68 µg/dl, ferritin of 1,500 ng/dl, iron binding capacity of 157 µg/dl, and an iron saturation of 43%. The patient's previous laboratory data revealed hemoglobin of 8.0 gm/dl and hematocrit of 24.6%. The patient was transfused three units of packed red blood cells; furthermore, gastroenterology was consulted to rule out gastrointestinal loss as the etiology of the patient's anemia. The patient underwent endoscopic evaluation with esophagogastroduodenoscopy (EGD) and colonoscopy. EGD [Figure 1a] revealed a 5-mm nodule in the fundus and a 5-mm clean-based ulcer in the body of the stomach; multiple erosions were found in the antrum. Biopsies were taken from the fundus nodule, gastric body ulcer, and antrum and sent for pathology. Colonoscopy [Figure 1b] revealed diminutive sessile polyps in the cecum, sigmoid colon, and rectum, in addition to large internal hemorrhoids. All polyps were removed by cold forceps polypectomy. Biopsy results from the antrum and body ulcer showed minimal inflammatory cell infiltration, and the stains for *Helicobacter pylori* were negative. The pathology results from the cecal polyp and rectal polyp revealed hyperplastic polyps. However, the pathology studies of the sigmoid polyp and fundus nodule [Figure 2a and b] were consistent with adenocarcinoma, and special immunohistochemical staining [Figure 2c and d] confirmed that it was consistent with prostatic origin. The patient was subsequently started on antiandrogen (bicalutamide 50 mg/day p.o.) and leuprolide acetate [luteinizing hormone-releasing hormone (LHRH) agonist]. The PSA level decreased to normal levels within 4 months. The patient has remained hemodynamically and clinically stable for 6 months since the diagnosis of synchronous metastasis of prostate cancer to the stomach and colon.



**Figure 1:** (a) Endoscopic images of the gastric nodule in the fundus of the stomach. (b) Endoscopic images of rectosigmoid polyp, which was removed and sent for pathologic evaluation

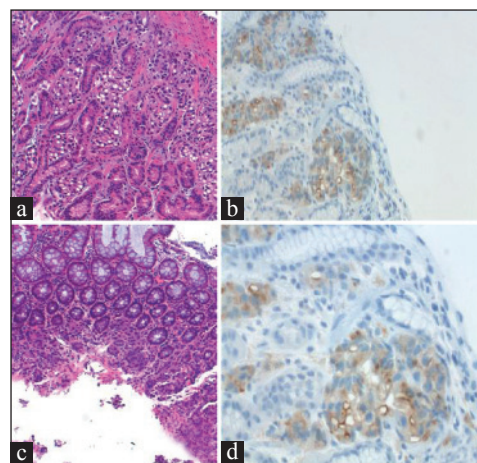
## Discussion

Only five cases have been described in the medical literature with gastric metastases from prostate cancer.<sup>[3-7]</sup> Gastric metastasis has been reported infrequently in the past, with an incidence of 1-4% in five postmortem studies.<sup>[2-5]</sup> All cases initially presented with isolated gastric involvement, but only one case<sup>[7]</sup> presented with rectal infiltration with prostate adenocarcinoma.

Various proposed routes include hematogenous cava-type spread with and without lung involvement, lymphatic spread, or direct infiltration.<sup>[2]</sup> Predominant tumor sites for metastases, such as the lungs or liver, have rich capillary vessels and, hence, a constant blood flow which may explain the pathophysiology of tumor spread; however, metastasis to the gastrointestinal tract may most likely occur via the lymphatic route because the prostate has a rich lymphatic drainage.<sup>[7-10]</sup>

As with other reported cases of gastric metastasis, our patient did not have symptoms of nausea and vomiting.<sup>[3-6]</sup> Our patient presented clinically with symptomatic anemia and that prompted an upper endoscopic evaluation to identify a gastrointestinal source of bleeding. Green demonstrated that the most common initial symptoms or findings for gastric metastasis from solid tumors were diffuse abdominal pain, nausea and vomiting, anorexia, guaiac-positive stool, and gastrointestinal bleeding.<sup>[9]</sup>

On histopathology, prostatic adenocarcinoma classically demonstrates the relative lack of nuclear anaplasia,



**Figure 2:** (a) Hematoxylin-eosin staining at intermediate magnifications shows neoplastic cells occupying the gastric mucosa in diffuse and nested arrangements. (b) Neoplastic cells in the fundic gastric mucosa demonstrating PSA immunohistochemical staining at low magnifications. (c) Hematoxylin-eosin staining at intermediate magnifications shows neoplastic cells occupying the colonic mucosa in diffuse and nested arrangements. (d) Colonic neoplastic cells demonstrating PSA immunoreactivity at low magnification

with nuclear uniformity, paucity of mitotic figures, and the absence of signet-ring cell forms. The diagnosis is confirmed by immunohistochemical staining with a positive PSA stain and a negative mucicarmine stain.

A majority of previous cases that describe the metastasis of prostate cancer to the gastrointestinal tract were, unlike our patient, hormone-refractory and were managed with chemotherapy.<sup>[6]</sup> In hormone-sensitive cases, similar to our case, total androgen blockade is the most commonly utilized treatment modality. This treatment approach has resulted in a decrease in PSA levels and clinical stability of the disease.

## Conclusion

This is the first report in the literature of synchronous metastasis to both stomach and sigmoid colon from prostate cancer. Although a very rare disease entity, it is imperative for oncologists, gastroenterologists, and urologists to consider the possibility of prostate carcinoma metastasizing to the gastrointestinal tract in a patient presenting with gastrointestinal symptoms and a history of prostatic adenocarcinoma.

## References

1. Malvezzi M, Bertuccio P, Levi F, La Vecchia C, Negri E. European cancer mortality predictions for the year 2012. *Ann Oncol* 2012;23:1044-52.

2. Gandaglia G, Abdollah F, Schiffmann J, Trudeau V, Shariat SF, Kim SP, *et al.* Distribution of metastatic sites in patients with prostate cancer: A population-based analysis. *Prostate* 2014;74:210-6.
3. Hong KP, Lee SJ, Hong GS, Yoon H, Shim BS. Prostate cancer metastasis to the stomach. *Korean J Urol* 2010;51:431-3.
4. Holderman WH, Jacques JM, Blackstone MO, Brasitus TA. Prostate cancer metastatic to the stomach. Clinical aspects and endoscopic diagnosis. *J Clin Gastroenterol* 1992;14:251-4.
5. Christoph F, Grünbaum M, Wolkers F, Müller M, Miller K. Prostate cancer metastatic to the stomach. *Urology* 2004;63:778-9.
6. Onitilo AA, Engel JM, Resnick JM. Prostate carcinoma metastasis to the stomach: Report of two cases and review of the literature. *Clin Med Res* 2010;8:18-21.
7. Bowrey DJ, Otter MI, Billings PJ. Rectal infiltration by prostatic adenocarcinoma: Report on six patients and review of the literature. *Ann R Coll Surg Engl* 2003;85:382-5.
8. Oda I, Kondo H, Yamao T, Saito D, Ono H, Gotoda T, *et al.* Metastatic tumors to the stomach: Analysis of 54 patients diagnosed at endoscopy and 347 autopsy cases. *Endoscopy* 2001;33:507-10.
9. Green LK. Hematogenous metastases to the stomach. A review of 67 cases. *Cancer* 1990;65:1596-600.
10. Malhi-Chowla N, Wolfsen HC, Menke D, Woodward TA. Prostate cancer metastasizing to the small bowel. *J Clin Gastroenterol* 2001;32:439-40.

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