

# Upper Gastrointestinal Bleeding From Metastatic Testicular Cancer

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We report a 22-year-old man who presented with a 2-week history of intermittent melena and worsening scrotal and leg swelling. His medical history was significant for testicular cancer for which he had undergone orchiectomy, lymphadenectomy, and platinum-based chemotherapy.

Esophagogastroduodenoscopy (EGD) performed revealed polypoid mass lesions in the second and third portions of the duodenum. Biopsy revealed mixed germ cell tumor with immature teratoma, the same histology as his testicular cancer.

His chemotherapy was changed to an ifosphamide-based regimen and a repeat upper endoscopic examination 5 months later revealed complete resolution of previously noted polypoid duodenal mass lesions. This also demonstrates the effectiveness of ifosphamide as second-line therapy in the setting of resistance to platinum-based therapy.

**Keywords:** men's health ■ cancer ■ intestines ■ metastasis ■ chemotherapy

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## INTRODUCTION

Testicular cancer metastasis to the gastrointestinal tract is uncommon and metastasis to the duodenum in particular is rare. In this report we describe a young man with testicular cancer who developed resistance to platinum-based chemotherapy regimen and presented with gastrointestinal bleeding.

## CASE REPORT

A 22-year-old man presented with a 2-week history of worsening scrotal and leg swelling. He had been having intermittent dark stools for 2 weeks with associated abdominal pain, and epigastric fullness. He had an abnormal weight loss, which he could not quantify. There was no history of heartburn, dysphagia, or nonsteroidal anti-inflammatory drugs (NSAIDs) use.

Two years previously, he had been diagnosed with testicular cancer and underwent a right orchiectomy. Histopathology revealed a mixed germ cell tumor with immature teratoma. He was irregular with his follow-up visits, but a year later, he underwent an exploratory laparotomy with extensive lymphadenectomy. He had multiple courses of platinum-based chemotherapy until 6 months prior, when he was lost to follow-up.

Physical examination revealed a chronically ill-looking man in no acute distress. His conjunctiva was pale, but he had no icterus. Abdominal examination revealed an irregular epigastric mass, which was mildly tender to palpation, and hepatomegaly. His bowel sounds were normal. He had an edematous scrotum and penile shaft. Rectal examination revealed external hemorrhoids and brown stool, which was positive for occult blood.

Laboratory data revealed hemoglobin 7.6 g/dL, platelet count 233 000/mL<sup>3</sup>, prothrombin time (PT) 14.5 seconds, partial thromboplastin time (PTT) 40 seconds. His chemistry panel was normal. His beta human chorionic gonadotropin ( $\beta$ -HCG) remained less than 10 IU/L, but alphafetoprotein (AFP) level increased significantly from 7.1 ng/mL 6 months earlier to 19 030 ng/mL. Computed tomography (CT) of the abdomen revealed extensive retroperitoneal lymphadenopathy.

After clinical stabilization, esophagogastroduodenoscopy (EGD) was performed, which revealed a small hiatal hernia and erythema in the esophagus and antrum. There was a 2-cm, ulcerated, polypoid mass lesion in the second portion of the duodenum (Figure), and a 1.5-cm smooth, polypoid mass lesion in the third portion of the duodenum. The biopsy of the polypoid mass lesions revealed mixed germ cell tumor with immature teratoma, consistent with metastatic disease from his testicular cancer.

The patient agreed to undergo chemotherapy and underwent 3 courses of ifosphamide-based regimen.

Five months later, a repeat EGD revealed complete resolution of the duodenal lesions.

## DISCUSSION

Testicular cancer represents approximately 1% of malignancies in men in the United States, but it is the most common malignancy in young men in the 15- to 35-year-old category.<sup>1</sup> Testicular cancer metastasis to the duodenum is rare. Attention was first drawn to this possibility by Ngan in 1970, when he reported 2 cases of testicular germ cell tumor metastasis to the duodenum.<sup>2</sup> In a review by Chait et al, only 5% of patients with germ cell tumor of the testis had gastrointestinal metastasis of which the duodenum was the most commonly affected part of the small intestine.<sup>3</sup> The most common symptom among patients with duodenal metastasis is mild to moderate gastrointestinal hemorrhage with hematemesis or melena as the presenting symptom.<sup>4,5</sup> Abdominal pain, abdominal masses and nonspecific low-back pain have also been reported as presenting complaints.<sup>6</sup>

Physical examination may reveal signs of anemia such as pale conjunctiva and orthostatic blood pressure changes. Epigastric tenderness and abdominal masses may be found on palpation. The findings on examination of the testes may vary from testicular atrophy to painless testicular mass lesions.<sup>6,7</sup>

Serum levels of AFP and/or ( $\beta$ -HCG) are usually elevated, but normal levels have been reported.<sup>8</sup> Ultrasonography of the testes is helpful in detecting small-mass lesions. CT invariably reveals retroperitoneal masses in all cases, which may be quite extensive. EGD may reveal ulceration and mass lesions in the duodenal wall.

Testicular metastasis to the duodenum occurs as a result of lymphatic drainage of the testes to the para-aortic nodes; or hematogenously, especially choriocarcinoma;

and by direct spread from adjacent tumor masses, which may invade the duodenum and cause ulceration.<sup>3,8</sup> The disruption of fascial planes during lymphadenectomy also facilitates intraperitoneal seeding of tumors.

The goal of therapy for testicular cancer is to achieve a cure, even though gastrointestinal involvement portends a poorer prognosis. Treatment modalities include orchiectomy, retroperitoneal lymph node resection, and cisplatin-based chemotherapy. Neoadjuvant chemotherapy has also been undertaken with success.<sup>7</sup> Salvage therapy can also be undertaken by using other chemotherapeutic agents such as etoposide and ifosfamide, which was successfully accomplished for our patient. High-dose therapy with carboplatin, and etoposide and autologous bone marrow transplant have also been used with success for cisplatin refractory cases.<sup>9</sup>

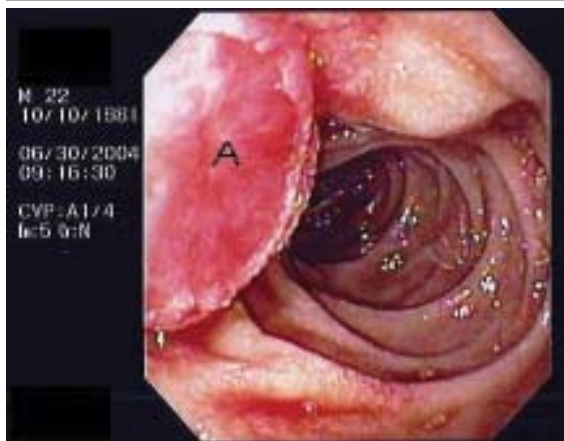
When young men present with symptoms suggestive of gastrointestinal hemorrhage, after exclusion of common causes of gastrointestinal bleeding, the possibility of testicular cancer should be entertained. Although testicular cancer is the most common malignancy in the 15- to 35-year age group, patients do not often volunteer information about testicular abnormalities. Therefore, we recommend that testicular examination be performed as part of the physical examination in this age group.

If an active bleeding or duodenal ulceration is seen during diagnostic EGD for evaluation of gastrointestinal bleeding, the patient should undergo standard endoscopic and medical treatment, including use of proton pump inhibitor therapy. Also, when patients with history of testicular cancer present with gastrointestinal complaints, metastasis to the gastrointestinal tract should be considered and explored. Extra precautions may be warranted during chemotherapy in that clinical scenario as massive hemorrhage from aortoenteric fistula has been reported with a poor outcome under such a circumstance.<sup>6</sup>

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**Figure.** Ulcerated Polypoid Mass Lesion in the Second Portion of the Duodenum With Hemorrhage, Adjacent to the Ampulla



A: Ulcerated polypoid mass lesion in the second portion of the duodenum with hemorrhage