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## A Case of Treated Penile Melanoma with Gastric Recurrence

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### ABSTRACT

Melanoma is a very aggressive skin cancer that could metastasize to any organ in the body. The treatment of melanomas includes surgical resection, chemotherapy, and immunotherapy. After resections, melanomas could recur at the previous site or present as a distant metastatic lesion. The symptoms of melanoma are vague and primarily occur because of the local disruption of the tissue architecture. Presented here is a case of gastric melanoma that presented with abdominal discomfort and melena in a patient with a history of penile melanoma that was completely resected 3 years earlier. This case illustrates the importance of having metastatic lesions to the intestinal tract as a differential for a patient with gastrointestinal hemorrhage.

### KEYWORDS:

Melanoma, Gastric Melanoma, Melena, Upper GI Bleed

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### INTRODUCTION

Melanoma is the most aggressive form of skin cancer and has the potential to metastasize to any organ in the body. While some metastatic sites like the lungs, central nervous system (CNS), and lymph nodes are more frequently observed, metastasis to the stomach is a rare entity.<sup>1</sup> Furthermore, due to vague and non-specific symptoms, metastatic gastric tumors remain undetected until autopsy.<sup>2</sup> Penile melanoma as a primary or metastatic cancer is extremely rare, accounting for less than 0.7% of penile cancers.<sup>3</sup> In this case report, we describe an unusual case of primary penile melanoma with metastasis to the gastric mucosa. The behavior of melanoma and its spread has been well described in the literature; we present a case where the primary and metastatic lesions are both in unusual sites.

### CASE REPORT

A 73-year-old man with a history of penile melanoma, who had undergone partial penilectomy and chemotherapy with remission, presented to the emergency department with a chief complaint of dizziness and black-tarry stool for 3 days. In the emergency department, the patient was

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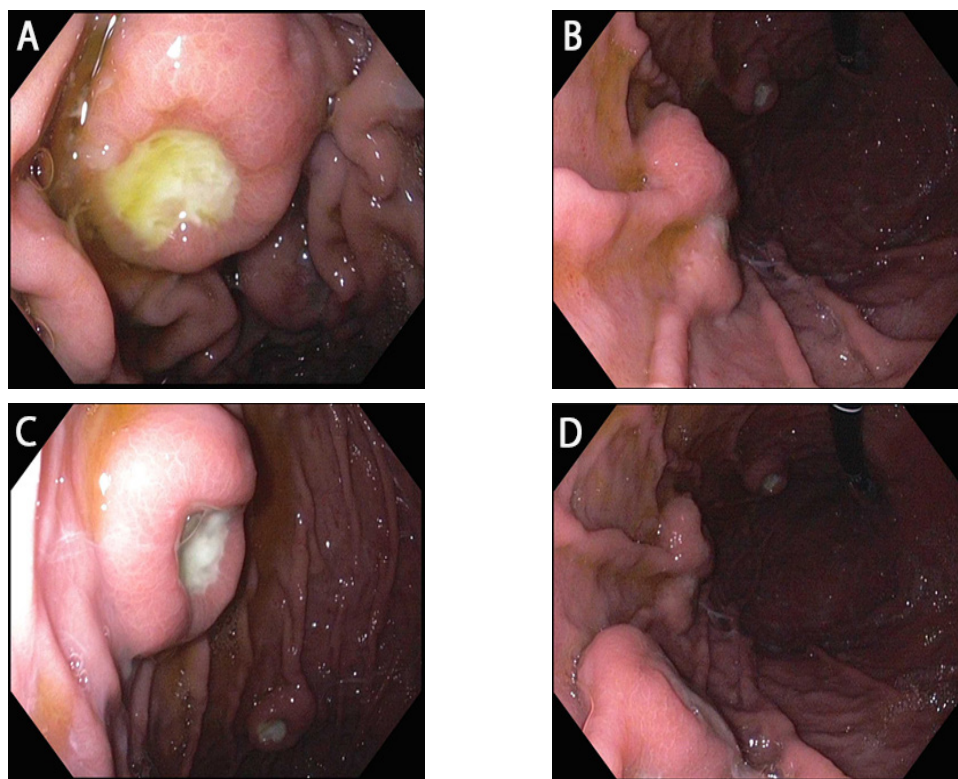
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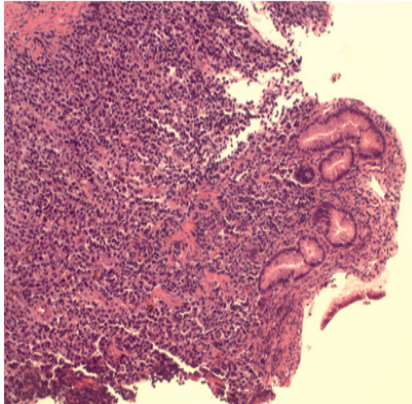
**Fig. 1 A-D:** Endoscopic images depicting the ulcerated masses, approximately 0.5cm in size

hypotensive and tachycardic. A rectal exam revealed black stool, which was guaiac positive. A penile exam revealed a surgical scar on the ventral side of the penis, and the remainder of the physical exam was unremarkable. Laboratory tests revealed a hemoglobin of 9.2 (g/dL), hematocrit 27.9 % (L/L), and MCV of 86.0, BUN: 30(mg/dL) and Cr: 0.82 (mg/dL). Due to hemodynamic instability, the patient was admitted to the medical intensive care unit and transfused one unit of packed red blood cells (PRBC), and started on intravenous pantoprazole. Given the high probability of an upper gastrointestinal bleed, an esophagogastroduodenoscopy (EGD) was performed, which revealed four separate 0.5 cm, ulcerated, submucosal masses with no active bleeding in the greater curvature of the stomach (figures 1). Cold forceps biopsies were taken, which eventually revealed metastatic malignant melanoma with extensive necrosis. The metastatic melanoma cells diffusely infiltrated the lamina propria and submucosa. The tumor cells were positive for Melanoma Antigen Recognized by T cells (MART-1) (figures

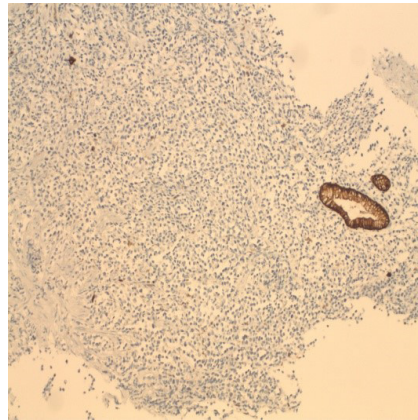
2-3). Computed tomography (CT) of the chest, abdomen, and pelvis was ordered to assess for any other metastatic lesions. CT of the chest revealed a single large aortopulmonary window lymph node on the right side measuring  $2.7 \times 2.5$  cm and other smaller reactive lymph nodes. CT of the abdomen and pelvis revealed a large left posterior gastric fungating mass, mostly exophytic, with infiltration of the greater curvature measuring  $10 \times 10 \times 11$  cm (figures 4). The patient received a total of one unit of PRBC, responded appropriately to transfusion, and remained hemodynamically stable, and eventually was transferred to general medical wards.

#### DISCUSSION

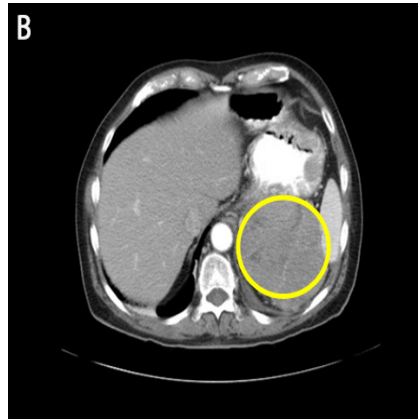
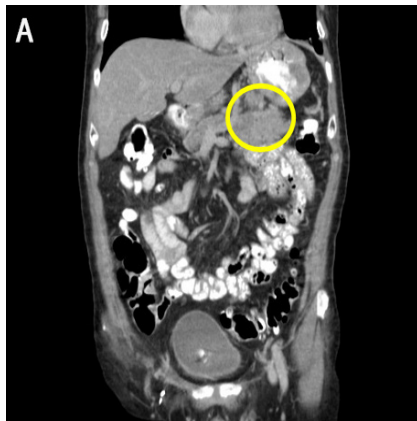
Primary sites of melanoma usually involve the skin of the extremities, followed by the trunk, and finally the head and neck.<sup>4</sup> Primary penile melanoma is an extremely rare malignancy that accounts for less than 2% of all primary penile malignant lesions.<sup>4</sup> Malignant melanoma has the potential to metastasize to any part of the body. Secondary neoplasms of the stomach are rare and are difficult to



**Fig. 2:** Pathology specimen positive for metastatic malignant melanoma with extensive necrosis.



**Fig. 3:** Pathology immunostains showing cells positive for MART-1



**Fig. 4:** Coronal and transverse computed tomography of the abdomen and pelvis showing a large exophytic mass posterior to the stomach.

diagnose because patients are usually asymptomatic.<sup>5</sup> Malignant melanoma metastases in the gastrointestinal tract are detected clinically in only 2% of the cases.<sup>6,7,8</sup> However, they are found in more than 60% of autopsies on patients who have died with disseminated melanoma.<sup>7,8</sup> The most common site for melanoma to metastasize to the gastrointestinal tract is the small bowel (35%-97%), followed by the stomach and duodenum (5-50%).<sup>7,8</sup> Given the absence of melanocytes in the stomach, gastric melanoma is believed to originate from ectopic melanocytes that migrate to the gastrointestinal tract during embryogenesis or differentiation of amine precursor uptake and decarboxylation cells to melanocytes.<sup>7</sup> Symptoms mainly include gastrointestinal bleeding, abdominal pain, anorexia, nausea, vomiting, weight loss, dysphagia, obstruction, and occasionally acute perforation.<sup>10</sup> Our patient presented with the sole complaint of melena.

The workup of an intra abdominal lesion includes both imaging and endoscopy<sup>9,10,11</sup> CT is commonly used to detect intra-abdominal lesions. Positron emission tomography (PET)/CT has also been shown to have higher sensitivity and accuracy in the detection of visceral metastases, including extra-intestinal metastatic disease.<sup>9</sup> Patients who present with gastrointestinal symptoms or display abnormal imaging should undergo endoscopic evaluation. This allows for direct visualization and potential diagnostic biopsy for a pathological diagnosis.<sup>11</sup>

The endoscopic classification of gastric metastases comprises three main morphological types.<sup>12</sup> Firstly, there are melanotic nodules, often ulcerated at the tip, which are the most frequently observed endoscopic feature. Secondly, there are submucosal tumor masses, melanotic or not, which are elevated and ulcerated at the apex. This is the typical aspect of “bull’s eye” lesions.

The third morphological type is a mass lesion, which may have varying degrees of necrosis and melanosis.<sup>13</sup> Our patient would be classified into the first category. Size does not play as much of a role in prognosis as compared with depth and invasion, which proves to be more important in staging and prognosis.<sup>14</sup> In primary gastric melanomas, the initial lesion thickness less than 0.75 cm is associated with excellent survival rates and a low risk of metastasis.<sup>15</sup>

Treatment of metastatic melanoma to the gastrointestinal tract may include surgical resection, chemotherapy, immunotherapy, biochemotherapy or observation.<sup>16</sup> Wornom and colleagues reported on the outcomes of 65 patients who underwent surgical excision of 94 metastatic lesions from various sites, including the brain, lung, abdomen, distant subcutaneous sites, and distant lymph nodes. Median survival ranged from 8 to 15 months in the various subgroups, and 16% of patients lived for 2 years or longer.<sup>17</sup> Ollila and co-workers retrospectively evaluated the role of surgery in the survival of patients with melanoma metastatic to the gastrointestinal tract. Of the 124 patients, 69 (55%) underwent surgical exploration of the abdomen, 46 (66%) had a curative resection, and 23 (34%) had a palliative procedure. Sixty-seven (97%) of 69 surgical patients experienced postoperative relief of their presenting gastrointestinal symptoms. The median survival in patients undergoing curative resection was 48.9 months, compared with only 5.4 months and 5.7 months in those undergoing palliative procedures and non-surgical interventions, respectively.<sup>18</sup> Although there are some studies looking at neoadjuvant treatment, there are still no definitive studies suggesting improvement in survival of patients with chemotherapy.<sup>19</sup>

Surgical resection is the only identifiable treatment modality for which independent predictive prognostic values have been demonstrated.<sup>15</sup> The main predictive factors of survival after curative resection include the site of metastasis, number of metastatic lesions, and the disease-free interval prior to the development of metastasis.<sup>19</sup> Systemic chemotherapy regimens show no benefit in overall survival and are not recommended for the treatment of malignant gastrointestinal melanomas.<sup>19</sup> Due to the high recurrence rate of metastatic melanoma, oncologic follow-up with periodic PET scan is recommended. Other exams such as upper endoscopy, colonoscopy, and CT are repeated as clinically indicated.<sup>20</sup>

Secondary gastric melanomas are usually diagnosed at the time of autopsy.<sup>7,8</sup> This case depicts a rare case of penile melanoma, which was resected and underwent chemotherapy; however, it presented 3 years post-operatively with tests showing isolated gastric recurrence. This case illustrates the need to always consider the recurrence of melanoma in the differential diagnosis, regardless of the primary site and treatment success of the melanoma in a patient presenting with gastrointestinal symptoms.

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#### ETHICAL APPROVAL

There is nothing to be declared.

#### CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest.

#### Informed Consent

Informed consent was obtained from the patient for this case report.

#### Author contributions

All authors contributed to the revision and approval of the manuscript.

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