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Metastatic malignant melanoma presenting as acute on chronic blood loss anemia

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Abstract

Malignant melanoma is a tumor with common lymphogenic or hematogenic metastasis. However, metastasis to the gastric mucosa is uncommon. We present the case of a 53-year-old lady with a past medical history of primary malignant melanoma of the left ear lobe, who had presented to our Emergency Department (ED) with weakness and shortness of breath. Initial laboratory findings revealed a hemoglobin level of 4.7 g/dL and a positive fecal occult blood test. Further work-up with endoscopy showed evidence of amelanotic lesions in the greater curvature of the stomach, which were consistent with metastases of the primary ear lobe malignancy. Therefore, in patients with a history of primary cutaneous melanoma presenting with acute or chronic blood loss anemia, physicians should maintain a high index of suspicion and opt for a focused esophagogastroduodenoscopy (EGD) to help identify underlying visceral metastases.

Keywords

malignant melanoma; metastases; gastrointestinal; anemia; endoscopy

Introduction

Melanoma is a malignant tumor of melanocytes and occurs predominantly in the skin. Due to its aggressive nature, the overall prognosis is poor with a median survival rate of 6-9 months in the presence of distant metastases [1]. Malignant melanoma is a common source of metastasis to the gastrointestinal (GI) tract. Frequent GI sites of metastatic involvement include small bowel (75%), the large intestine (25%), and the stomach (16%) [2]. Metastases to the GI tract can present at the time of diagnosing the primary melanoma, or may manifest decades later as the first sign of recurrence [1]. In patients with a history of melanoma, a high index of suspicion for metastasis must be maintained at all times. Diagnosis requires careful inspection of the mucosa for metastatic lesions and biopsy with special immunohistochemical stains.

Case Report

We present a 53-year-old lady with a history of cutaneous melanoma of the left ear lobe diagnosed 5 years ago, for which she underwent lesion resection, followed by interferon therapy. She did not receive chemotherapy or radiation. She was stage T1N0M0 at the time of diagnosis. Years after resection and

immunotherapy, she presented to our ED with complaints of weakness and progressive shortness of breath for two weeks. Physical examination was remarkable for conjunctival pallor, tachycardia, and a partially resected left ear. Laboratory findings were significant for severe microcytic anemia with hemoglobin (Hb) of 4.7 g/dL, mean corpuscular volume (MCV) of 60 fL, and a positive fecal occult blood test. Further history taking revealed that she had intermittent dark stools for several months prior to her most recent presentation.

On admission, she was started on a pantoprazole drip, appropriate fluid resuscitation, and was given blood transfusions to keep the hemoglobin at a target level above 7 g/dL. After initial stabilization, she underwent endoscopic examination of the upper GI tract which revealed three distinct areas of ulceration and exudation. Dimensions and locations of the lesions were: 3 cm in the posterior wall of the antrum; 4.5 cm on the greater curvature in the body of the stomach; and 2 cm on the greater curvature near the fundus (Figure 1). Biopsies were taken from the respective sites, and pathological examination demonstrated multiple malignant amelanotic lesions. Microscopic examination of the gastric mucosal biopsy tissue showed infiltration by numerous pleomorphic tumor cells (Figure 2a). Immunohistochemical examination showed a positive reaction to S-100 protein (Figure 2b), Melanoma Antigen Recognized by T cells 1 (MART 1) (Figure 2c), HMB-45 antibodies (Figure 2d),Ki-67 protein stain (Figure 2e), and H&E stain showing melanoma cells (Figure 2f).

At this point, she was diagnosed with Stage IV Metastatic Malignant Melanoma. Her critically low hemoglobin, rapidly developed weakness and shortness of breath were attributed to acute-on-chronic blood loss from the metastatic malignant lesions, manifesting as melena. This is evident by her history of intermittent dark stools for several months. Later, she was started on iron supplementation and long term oral pantoprazole therapy. She was discharged from our hospital after significant clinical improvement, with hemoglobin levels stable around 8.5 g/dL.Due to the fact that she had a primary oncologist elsewhere, she preferred to follow up with them.

Discussion

Malignant melanoma is known to metastasize to different organs of the body with an unusual predilection for the GI tract. Although 44-52% of patients who die of disseminated melanoma have involvement of the GI tract detected at autopsy, a clinical antemortem diagnosis is made in less than 5% of these patients [3]. This is most likely due to the fact that melanoma by itself mimics other conditions with a frequently asymptomatic character and may lurk undetected for a long time, especially when located intra-abdominal. Usually, most of the patients who are diagnosed with melanoma antemortem do so because of associated emergencies such as obstruction, bleeding, or perforation [4]. Our patient presented with symptomatic acute-on-chronic blood loss anemia which is a known presentation. Of note, melena appears to be the primary symptom for gastrointestinal metastasis, even in the absence of other symptoms, but the exact incidence of symptomatic visceral metastatic lesions is unknown [4]. Symptoms often include nonspecific complaints such as anorexia, nausea, vomiting, weight loss and abdominal pain [4].

Diagnosis of malignant melanoma metastatic to the GI tract is therefore a clinical challenge. Diagnosis is generally made by radiographic contrast studies, including CT, ultrasonography, barium studies and endoscopic tests [5]. A retrospective review of 230 patients with malignant melanoma in the

setting of small bowel metastases who underwent CT screening shows only a 60-70% sensitivity [6]. Endoscopy has recently replaced almost all radiologic investigations, as the more reliable diagnostic tool. It serves both a screening and confirmatory function, since it allows for gross morphological evaluation and permits direct biopsy for establishing a pathological diagnosis [7]. Moreover, endoscopic follow-up can allow for serial monitoring of the course of metastasis, evaluate for treatment results, and also grants the possibility for non-invasive therapeutic interventions in the form of sclerotherapy, laser photocoagulation or argon plasma beam coagulation in the event of active bleeding at the metastatic lesion [8].

Although the most common finding on endoscopy is the presence of pigmentation (85%), our patient was found to have three amelanotic nodules in the gastric fundus, body and antrum. Metastatic melanoma lesions may be classified endoscopically into three major subtypes, based on their gross morphologic appearance. The first type of lesion is a melanotic nodule, which happens to be the most common endoscopic finding, and is usually ulcerated at the tip. The second type is a submucosal tumor mass, which could be melanotic or amelanotic. Most of the times, the aforementioned lesions are elevated and ulcerated at the apex, giving them a “target shaped" appearance. These bull's-eye lesions are described as polypoid in another classification presented by Bender et al., [10]. The third lesion type is a mass with varying incidence of necrosis and melanosis [7].

Treatment options include observation, surgical resection, chemotherapy, immunotherapy or participation in clinical trials [9]. For palliative reasons in symptomatic patients, surgical resection of metastatic melanoma lesions of the GI tract is recommended, since it provides significant improvement in quality of life with low operative morbidity and mortality [3].

Conclusion

In conclusion, the authors wish to highlight a very important finding when it comes to primary cutaneous melanoma. Although rare, malignant melanoma has the potential to metastasize to the stomach. It can also present in a rare fashion in the form of symptomatic chronic blood loss anemia. We recommend timely surveillance endoscopies of patients with melanoma to identify and treat these malignant lesions early, which would help decrease the morbidity and mortality.

Figures

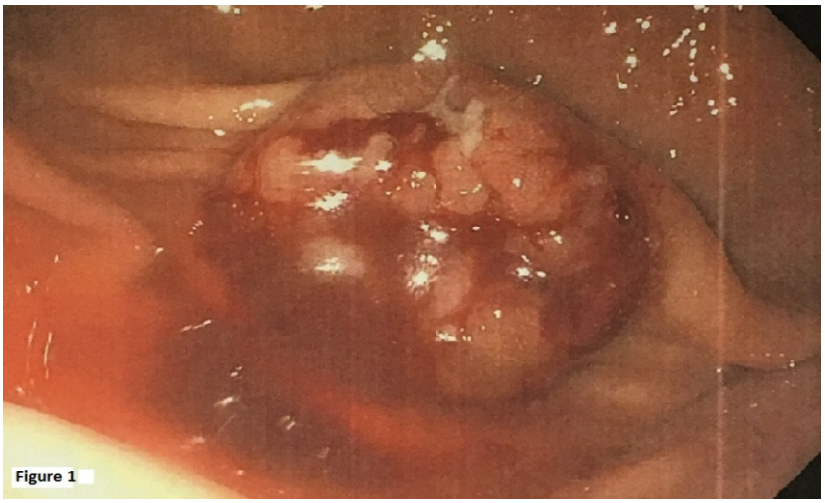

Figure 1: Amelanotic nodule in the gastric fundus.

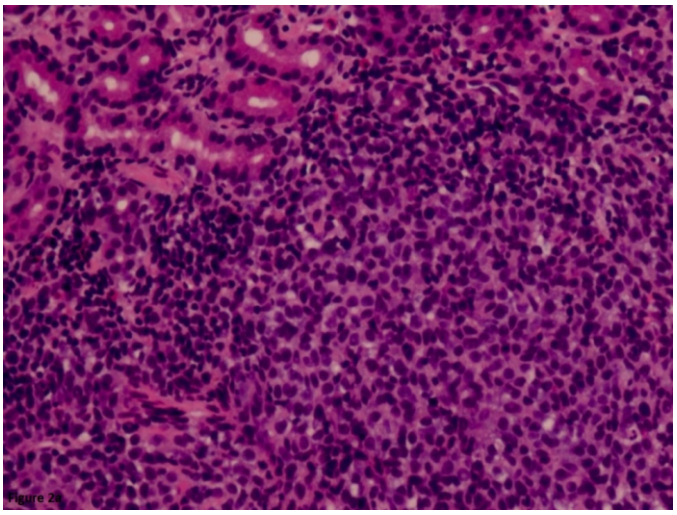

Figure 2a: Pleomorphic tumor cells

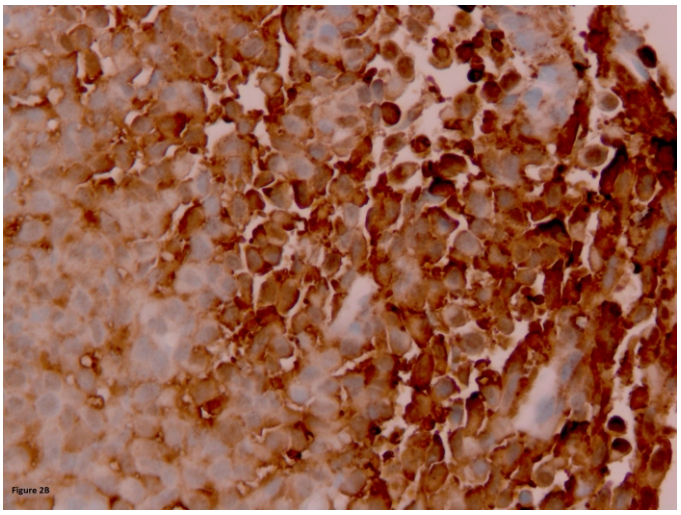

Figure 2b: S-100 protein stain

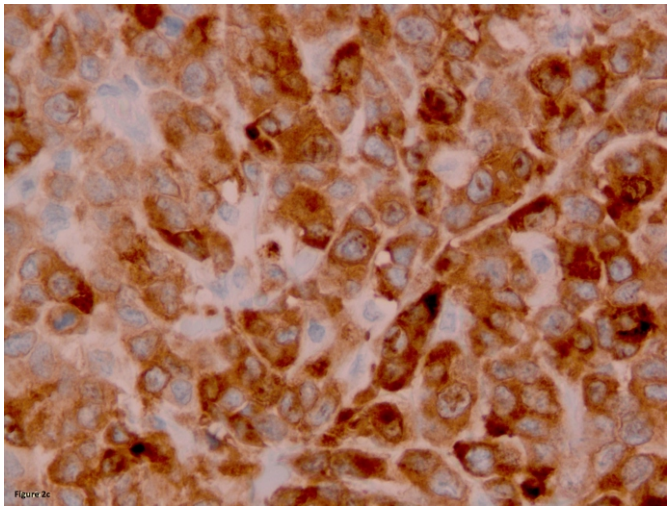

Figure 2c: MART 1 stain

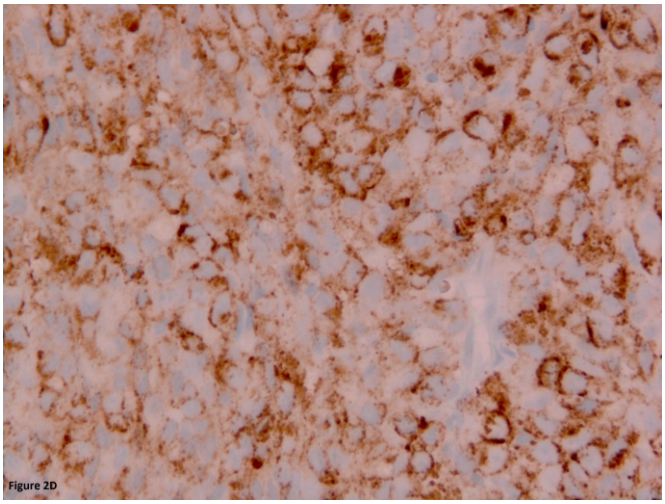

Figure 2d: HMB-45 antibodies stain

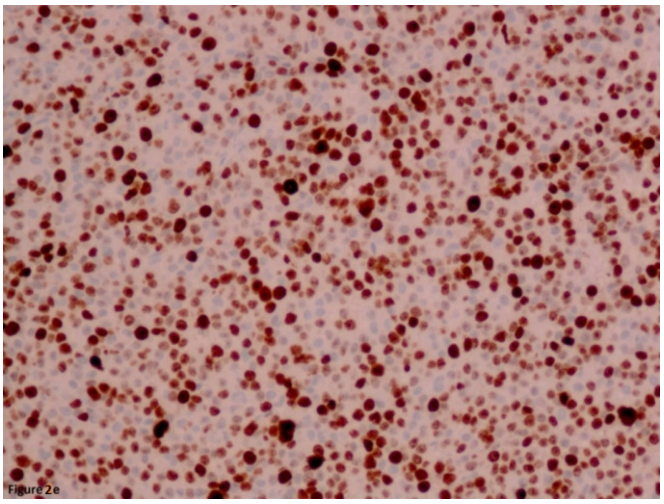

Figure 2e: Ki-67 protein stain

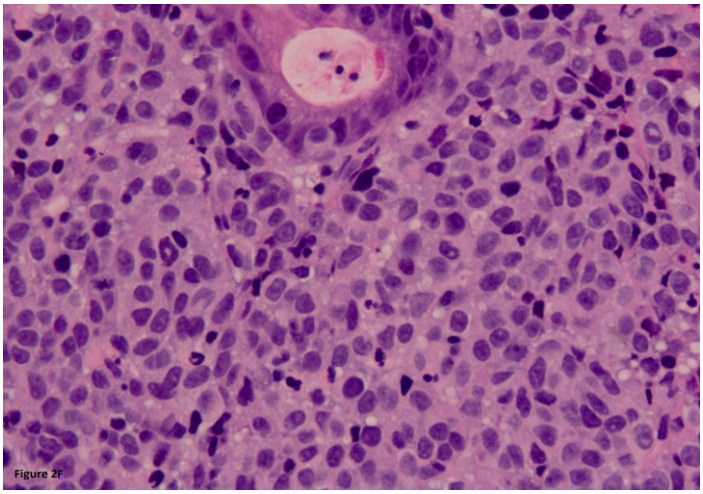

Figure 2f: H&E stain

References

1. El-Sourani N, Troja A, Raab H-R, Antolovic D. Gastric Metastasis of Malignant Melanoma: Report of a Case and Review of Available Literature. Viszeralmedizin. 2014;30(4):1-1