



A Rare Case of Gastric Metastasis from a Rare Case of Mucosal Malignant Melanoma

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Abstract

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BACKGROUND: Malignant melanoma (MM) is the deadliest form of skin cancer and the most common carcinoma to metastasize into the gastrointestinal tract (GI). While the jejunum, ileum, colon, and rectum are common gastrointestinal sites of metastasis, metastatic melanoma in the stomach is rare and usually not detected until late in the disease.

CASE PRESENTATION: We report a patient who presented with hematemesis, epigastric pain, and weight loss. In the second esophagogastroduodenoscopy, after 8 months from the first endoscopic assessment, a double ulcerative gastric mass was found, and histopathology confirmed metastatic malignant melanoma. The complete surgical resection of GI metastatic MM in carefully selected patients not only provides symptom control but has also been associated with an increase in overall survival in the absence of other metastatic sites. At present, the overall survival of patients with advanced metastatic MM who have been treated with a combination of immunotherapeutic agents reaches 52% at 5 years.

CONCLUSION: The role of surgery for patients with metastatic involvement of the GI tract with MM is evolving in the era of effective systemic treatments.

Introduction

Malignant melanoma is the fifth most common cancer among the population, a severe type of skin cancer with the potential to metastasize to various organs in the body [1], necessitating prompt detection and treatment. Melanoma is one of the most common malignancies associated with metastatic disease of the gastrointestinal tract [2]. Gastrointestinal metastases most frequently occur in the small bowel, with the colon, stomach, and rectum following as subsequent common sites [3]. Gastric metastasis of malignant melanoma is frequently diagnosed post-mortem [4]. Secondary stomach involvement is infrequent and poorly described [5]. Stomach localization is an exceptionally rare occurrence, constituting approximately 5% of all gastrointestinal localizations and about 1.5% of all metastatic cases documented in post-mortem records [6]. Symptoms are usually indistinguishable from those caused by other gastrointestinal tumors, encompassing abdominal pain, fatigue, dysphagia, constipation, tenesmus, small bowel obstruction, perforated bowel, hematemesis, and melena [7].

We present a melanoma case featuring gastric metastases. Our analysis will encompass typical clinical

observations, delve into pathological and endoscopic findings, and explore potential treatment modalities.

Case report

A 64-year-old woman, previously diagnosed with mucosal melanoma of the middle ear, presented to our clinic complaining of hematemesis (vomiting blood), epigastric (upper abdominal) pain, and weight loss. Initial blood tests revealed anemia, with a hemoglobin level of 10.8 and a hematocrit of 27.9%. Physical examinations of her abdomen and rectum were unremarkable. The basic metabolic and coagulation panels were also within normal limits.

Two years ago, a CT scan had shown a lesion in her middle ear with suspected metastases to neck lymph nodes, which were confirmed through biopsy. The middle ear lesion was surgically removed, and pathology confirmed mucosal melanoma. Subsequently, she underwent 4 months of immunotherapy (Nivolumab).

Eight months prior, she underwent an upper endoscopy due to gastrointestinal symptoms and anemia, which revealed a chronic ulcer in the stomach confirmed with a biopsy. Given her history of hematemesis and the previous endoscopy findings, another upper endoscopy was conducted. This time, two hyperpigmented ulcer lesions were found in the antrocorporeal region of the stomach, measuring 2.5 cm and 1 cm, respectively (classified as Forrest IIb ulcers) (Figure 1).

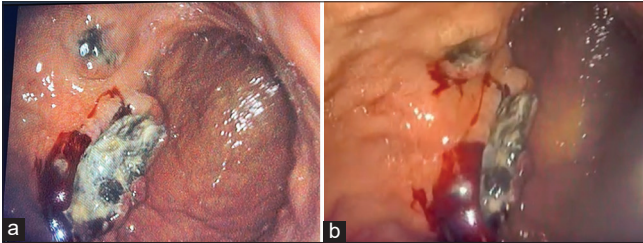


Figure 1: Two hyperpigmented ulcer lesions in the antrocorporeal region of the stomach, measuring 2.5 cm and 1 cm, respectively (classified as Forrest IIb ulcers)

Biopsies showed infiltration of the lamina propria and muscularis mucosa by neoplastic cells filled with melanin pigment (brown pigment) (Figure 2). In addition, a colonoscopy revealed grade I internal hemorrhoids.

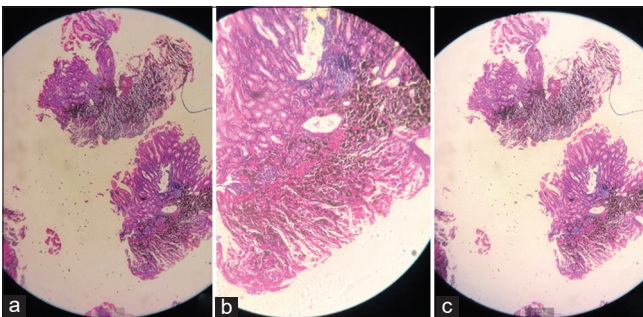


Figure 2: Infiltration of the lamina propria and muscularis mucosa by neoplastic cells filled with melanin pigment (brown pigment)

Based on these results, it was concluded that the patient had melanoma metastases to the stomach. Subsequent whole-body PET/CT scans confirmed only gastric lesions as metastatic sites (Figure 3), prompting the decision to perform a gastrectomy, after which the patient displayed a good clinical condition.

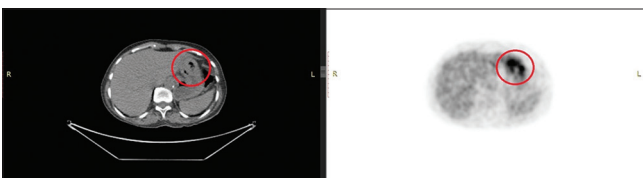


Figure 3: Gastric lesions as metastatic sites

Discussion

After gastric metastases are clinically detected in individuals with melanoma, their survival on average

ranges from 2 to 4 months [8]. The location of distant metastasis serves as a significant independent predictor of survival among individuals with metastatic disease. Patients who have only one distant metastatic site experience markedly better outcomes compared to those with two or more distant sites of metastasis [9]. Primary mucosal melanomas pose a higher risk of spreading to the stomach, with a prevalence rate of 6.2% [10].

Due to the symptoms overlapping with those of other gastric tumors, diagnosis is seldom achieved before either endoscopy or palliative surgery [11]. Diagnosis involves the utilization of radiographic studies and endoscopic evaluation. The presence of a mural nodule or mass on CT imaging frequently indicates the diagnosis. In a retrospective study, CT scans successfully detected 69.7% of visceral and non-visceral metastases compared to PET/CT, which was more accurate at 98.7% [12].

Endoscopy stands as the primary diagnostic tool for identifying gastric metastases, despite the fact that the endoscopic observations may resemble various forms of primary gastric tumors, whether in their early, or advanced stages. Endoscopic observations of tumors can be categorized into three types: Melanotic nodules emerging on normal rugae with ulceration (displaying the characteristic appearance of “bull’s eye” lesions in barium meals), submucosal masses exhibiting ulcerations, and lesions characterized by necrosis and melanosis [13]. The primary endoscopic indicator is the presence of pigment within the lesions. Nevertheless, even amelanotic lesions can yield positive outcomes upon biopsy and comprehensive evaluation. The majority of gastric metastases originating from malignant melanoma are situated at the greater curvature of the body and fundus, while lesions along the lesser curvature are infrequent [14]. Confirmation of melanoma is established through positive immunostaining with S-100 protein and the monoclonal antibody HMB45 on biopsied samples [2].

Options for treating metastatic melanoma of the GI tract may encompass surgical resection, chemotherapy, immunotherapy, biochemotherapy, observation, or enrollment in clinical trials. For patients classified as low risk with localized gastrointestinal tract disease, surgery is often the recommended course of action. This decision is based on a thorough evaluation of the potential benefits of metastasectomy weighed against the risks and potential complications of the procedure. Although there are no definitive criteria for surgical intervention, the treatment of gastric metastases should encompass surgical resection whenever it is a viable option [15]. Patients who were chosen for and underwent curative resection of gastrointestinal metastases typically had a longer overall survival compared to those who underwent palliative resection or received medical therapy (48.9 months vs. 5.4 and 5.7 months, respectively) [16].

Conclusion

Given the typically non-specific clinical presentation of gastric metastatic melanoma, detection often occurs posthumously during autopsy. Accordingly, maintaining a heightened suspicion for metastasis in patients with a prior history of malignant melanoma presenting with gastrointestinal symptoms and anemia is crucial. Endoscopic evaluation with meticulous mucosal inspection is warranted for such patients. Upon confirmation of diagnosis or in cases where endoscopic management of complications is inadequate, surgical resection should be contemplated, as it could potentially extend survival in the absence of other distant metastases.

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