

Gastric outlet obstruction secondary to malignant melanoma: A case report

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Abstract

Gastric Outlet Obstruction (GOO) is a common clinical condition. The commonest causes are benign gastric ulcer and gastric cancer involving the antrum. Malignant melanoma of the duodenum causing GOO is extremely rare. We herein present a rare case of malignant melanoma involving the first part of duodenum and proximal jejunum who presented with features of gastric outlet obstruction.

Introduction

Gastric Outlet Obstruction (GOO) refers to an impediment, complete or partial, to the outflow of gastric content in the distal stomach, pylorus, or proximal duodenum. The causes are classified as either benign or malignant.¹⁻⁶ In this era of proton pump inhibitors and the possibility of eradicating *Helicobacter pylori* in peptic ulcer disease, malignant causes of gastric outlet obstruction are rapidly increasing and, in some studies have surpassed benign causes.⁷ Malignant Gastric Outlet Obstruction (MGOO) is a clinical condition characterized by mechanical obstruction of the pylorus or duodenum caused by tumor compression or infiltration, resulting in decreased or impossible oral intake.¹ It is frequently secondary to advanced pancreatic or antral gastric cancers. And has a significant impact on patients' quality of life and survival as a result of either the primary disease or the complications of gastric outlet obstruction.¹

Secondary malignancies in the gastrointestinal tract are more common than primary lesions and are caused by metastatic lesions to the small bowel. Lung cancer, renal cell carcinoma, breast cancer, and malignant melanoma are the most common primary neoplasms that metastasize to the duodenum.² Despite the fact that cutaneous malignant melanoma is one of the most

common cancers to metastasize to the gastrointestinal tract, malignant melanoma is still a rare GI tract neoplasm.³⁻⁶ Malignant melanoma with gastric outlet obstruction is even more uncommon. We present a case of such a rare occurrence.

Case Report

A 44-year-old businessman appeared to be in good health until about a year ago, when he began losing weight and developing anorexia. There was no history of drenching night sweats, but there was a history of low grade fever on occasion. There was no history of coughing or breathing difficulties. He developed recurrent vomiting about 2 months prior to presentation, primarily postprandial with recently ingested feeds but with occasional stale feeds in the vomitus. There was no history of abdominal distension, but there was a history of intermittent constipation. He, however, had a history of colicky abdominal pain. He was admitted about a month prior for anemia symptoms and received two pints of blood transfused. He had no history of hypertension or diabetes.

On examination, he was found to be wasted, pale, and afebrile. There were no hyperpigmented patches. An examination of the abdomen revealed epigastric tenderness but no palpable mass. succussion splash was positive. Bowel sounds were extremely active. The digital rectal exam was unremarkable. Other examination results were mostly normal. The gastric outlet obstruction caused by gastric cancer was evaluated. An obstructing duodenal tumor was discovered during an upper gastrointestinal endoscopy. An ultrasound scan of the abdomen revealed epigastric masses with no evidence of liver metastasis. The results of the other investigations were essentially normal. He had a laparotomy, which revealed proximal jejunal masses and a massive duodenal tumor, both of which were dark in color. There was also mild ascites.

The jejunal mass was segmentally resected (Figure 1) with an end-to-end jejunojejunalanastomosis. Because the duodenal mass was fixed to the retroperitoneum and was unresectable, a gastrojejunostomy was also performed. He recovered well and was discharged on the eighth postoperative day. The resected mass's histology reveals features suggestive of malignant melanoma (Figure 2), and immunohistochemistry reveals positivity for S100 antigen (Figure 3).

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Discussion

Malignant melanoma of the Gastrointestinal Tract (GIT) accounts for 2% of all melanomas, occurring as primary lesions or as metastasis.^{4,5} The majority of primary lesions are found at both ends of the tract, in the oropharynx and the anal canal.³ Their occurrence as a primary lesion in the small intestine is less common, and involvement of the duodenum is even rarer.

The small intestine is the most commonly affected by metastatic melanoma to the GI tract, followed by the colon, stomach, and rectum.^{4,5} Clinically, it is difficult to distinguish primary intestinal melanoma from metastatic melanoma because primary lesions tend to regress and disappear.⁶ In some cases, the primary lesions are simply overlooked. A small submillimeter lesion between the fourth and fifth toes was the only primary skin lesion detected in the case reported by Ettahri *et al.*⁶ This could have easily been reported as a metastatic lesion but for the presence of an ipsilateral lymph node. In cases of GIT Melanoma, a detailed history and thorough examination of the skin, retina, anal canal, under the nail, esophagus, penis, or vagina are required to rule out secondary malignant melanoma.⁴ And these may not be enough; thus, the term “unknown primary melanoma.” The case reported included an active search for a primary skin lesion, but it was not as thorough as the case reported by Ettahri *et al.*⁶

The presentation of gastrointestinal tract melanoma, whether primary or metastatic, is similar. They have a wide range of clinical symptoms, including abdominal pain, intestinal obstruction, constipation, jaundice, vomiting, melena, anemia, fatigue, weight loss, and the presence of a palpable abdominal mass. These clinical manifestations are shared by all ulcerative lesions or neoplasms of the GI tract.^{6,7} Overt or occult gastrointestinal bleeding is not uncommon as the initial presentation in some cases reported.⁶⁻¹⁰ When the bleeding was properly investigated, an early diagnosis was made, and in some cases, curative surgery was recommended, as demonstrated by the cases presented by Korkolis *et al.* and Meyers *et al.*^{4,11} Upper GI endoscopy is the procedure of choice for the detection of duodenal melanomas, as it is for other upper GI tract pathologies.^{6,9} Melanoma of the duodenum can look like lymphoma, Gastrointestinal Stromal Tumors (GIST), or carcinoma, especially if it lacks visible

melanin pigmentation, as in Amelanotic melanoma.⁹ Similarly, by expressing the S100 protein, clear cell sarcoma and GIST can mimic melanoma.^{9,12} When other immunohistochemical panels, such as HMB 45 and Melan-A, are included in the pathological assessment, the sensitivity and specificity for the diagnosis of malignant melanoma are increased.^{6,9}

Our review of the literature revealed that malignant melanoma is a rare cause of gastric outlet obstruction. And we didn't find any other cases of gastric outlet obstruction caused by malignant melanoma like the one in this index case. This, we realized, could be due to a combination of factors in this presentation. The first issue was the late presentation: early symptoms of upper gastrointestinal obstruction are generally vague and non-specific, which makes early diagnosis difficult, particularly in cases where imaging assessment was not performed early.⁸ This is exacerbated by the inaccessibility of health care in Sub-Saharan Africa, as well as the lack of these imaging tools in the majority of health care facilities. All of these factors, as well as the advanced stage of the disease in the case presented, are to blame for the late presentation. Second, the occult bleeding: unlike in the case reported by Krüger *et al.*,⁷ where the patient presented with overt gastrointestinal bleeding and anemia, the patient in this case did not require immediate further evaluation. Our patient presented in a less concerning manner, with symptoms of anemia caused most likely by occult bleeding. As demonstrated in the case series of Krüger *et al.*⁷ and Gupta and Brasfield,⁸ evaluation of bleeding, whether overt or occult, plays an important role in the early diagnosis of cases.^{5,9}

Finally, esophagogastroduodenoscopy is an important tool for evaluating, diagnosing, and monitoring malignant melanoma in the upper gastrointestinal tract.¹⁰ An esophagogastroduodenoscopy was performed in the case reported by Sukanuma *et al.*,³ as it was in ours. But, unlike in our case, it was done early, and a biopsy revealed the diagnosis of malignant melanoma before surgery. However, esophagogastroduodenoscopy and biopsy may not reveal the diagnosis of certain types of malignant melanoma (amelanotic type). Further pathological evaluation may be required for histological diagnosis and immunohistochemistry staining.¹¹ Because of the late and emergency presentation, the tool was used late and the patient was operated on even before the histology result was released in the reported case.



Figure 1. A macroscopic appearance of the tumour. There is circumferential involvement extending about 4cm into the normal mucosa. The transected surfaces are blackish and show transmural and serosal involvement.

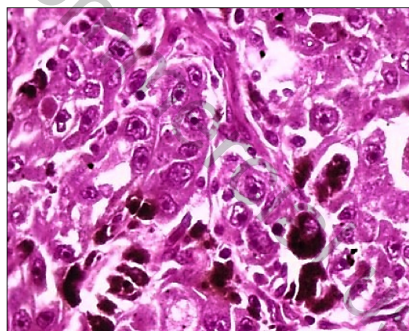


Figure 3. Tumour cells with moderately pleomorphic nuclei, prominent inclusion-like nucleoli and moderate cytoplasm. The cells are admixed with melanophages and are dispersed in scanty fibrous stroma. X400.

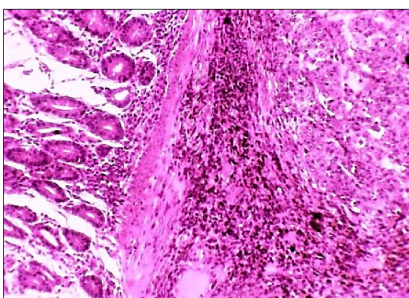


Figure 2. A focus of preserved native tissue adjacent to the malignant melanocytic cells, H and E. x200.

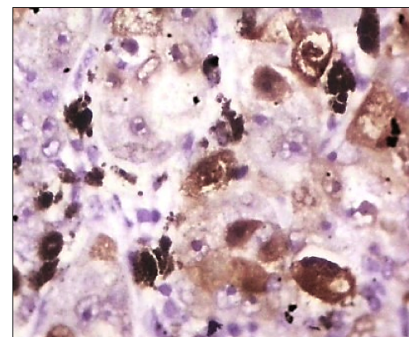


Figure 4. Tumor cells with nuclear and cytoplasmic positivity for S100. X400.

Conclusions

Although gastric outlet obstruction due to malignant melanoma is uncommon, it should be considered as a differential diagnosis. Clinical, modern radio-imaging, or autopsy should be used to identify the primary source whenever possible.

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