



(CASE REPORT)



GASTRIC OUTLET OBSTRUCTION REVEALING DUODENAL METASTASIS OF MALIGNANT MELANOMA

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ABSTRACT

Background: Gastrointestinal metastases from malignant melanoma are relatively frequent at autopsy but are rarely diagnosed during life due to nonspecific clinical presentation. Duodenal involvement is particularly uncommon [1-2].

Case presentation: We report the case of a patient presenting with acute vomiting and gastric outlet obstruction. Imaging revealed circumferential thickening of the third portion of the duodenum. Endoscopy showed a stenosing ulcerated lesion, and a self-expandable metallic stent was placed for palliation. Histopathological and immunohistochemical analyses confirmed duodenal metastasis of malignant melanoma.

Conclusion: Duodenal metastasis of melanoma is rare and often diagnosed at an advanced stage. Endoscopic palliation represents an effective therapeutic option in selected patients.

Keywords : Duodenum, Endoscopy, Gastric outlet obstruction, Malignant melanoma, Metastasis.

1 INTRODUCTION

Malignant melanoma has a high metastatic potential, with gastrointestinal involvement occurring particularly in advanced disease [1-2]. Although the small bowel is a common site of gastrointestinal metastasis, duodenal involvement is rare and may remain undetected because of nonspecific symptoms until complications such as bleeding or obstruction develop [2-3]. We report a case of duodenal melanoma metastasis presenting as gastric outlet obstruction to highlight the diagnostic challenges and therapeutic considerations associated with this uncommon presentation.

2 CASE PRESENTATION

An 82-year-old woman presented with persistent vomiting, epigastric pain, weight loss, and asthenia. Her medical history included diabetes mellitus, chronic obstructive pulmonary disease, chronic kidney disease (estimated glomerular filtration rate, 13 mL/min), and heart failure with a reduced left ventricular ejection fraction of 40% secondary to dilated cardiomyopathy. She had previously been diagnosed with cutaneous melanoma of the left index finger in 2010 and had undergone complete left axillary lymph node dissection for a 60-mm nodal recurrence in 2017.

On admission, the patient was frail but hemodynamically stable, with mild abdominal tenderness. Laboratory investigations revealed mild anemia (hemoglobin, 11.2 g/dL), renal impairment (serum creatinine, 272 μ mol/L), hypokalemia, and an elevated C-reactive protein level.

Abdominal computed tomography demonstrated gastric outlet obstruction associated with circumferential wall thickening involving an approximately 7-cm segment of the third portion of the duodenum, raising suspicion of malignancy (figure 1). A pulmonary nodule suspicious for metastasis was also identified.



Figure 1: Axial abdominal computed tomography image illustrating duodenal obstruction with upstream gastroduodenal dilatation.

Upper gastrointestinal endoscopy revealed an ulcerated, friable, stenosing lesion extending from the second to the third portion of the duodenum, with contact bleeding (figure 2). Biopsy specimens were obtained, and a 12-cm self-expandable metallic duodenal stent (WallFlex) was successfully placed to relieve the obstruction (figure 3).



Figure 2: Endoscopic view of a lobulated duodenal mass causing luminal narrowing.

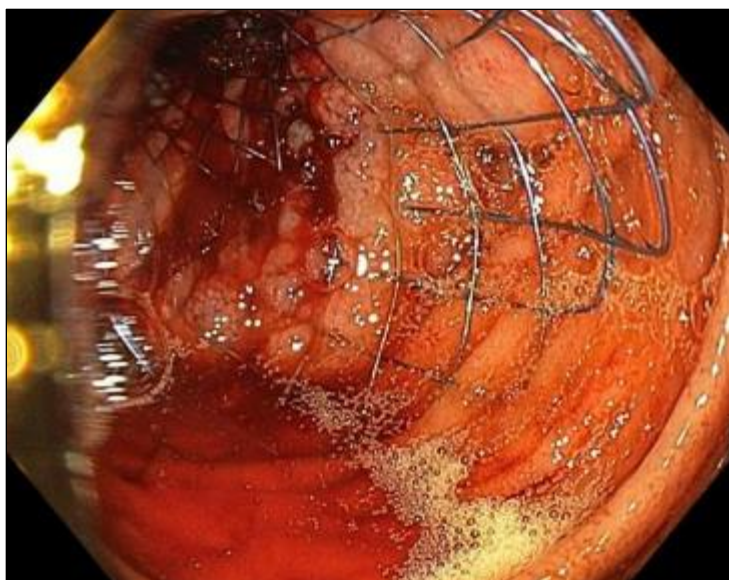


Figure 3: Endoscopic view following placement of a self-expanding metal stent across the duodenal obstruction.

Histopathological examination revealed a diffuse proliferation of spindle and epithelioid tumor cells with nuclear atypia, frequent mitotic figures, and scant melanin pigment. Immunohistochemical staining showed positivity for S100, SOX10 with diffuse nuclear staining, Melan-A (figure 4), and HMB45 (figure 5), whereas cytokeratins, CD117 (figure 6), DOG1, CD34, and desmin were negative. In the context of her previous cutaneous melanoma, these findings confirmed the diagnosis of duodenal metastasis of malignant melanoma.

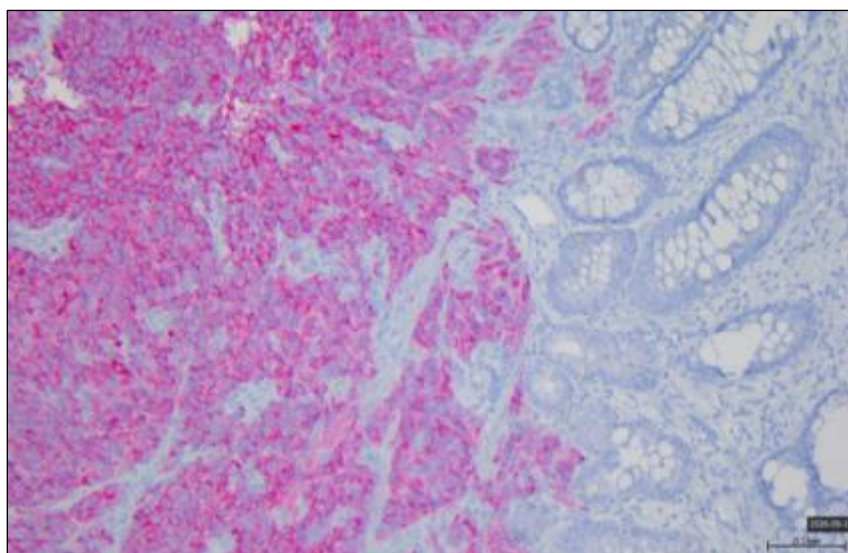


Figure 4: Cytoplasmic positivity for Melan-A in tumor cells, supporting melanocytic differentiation

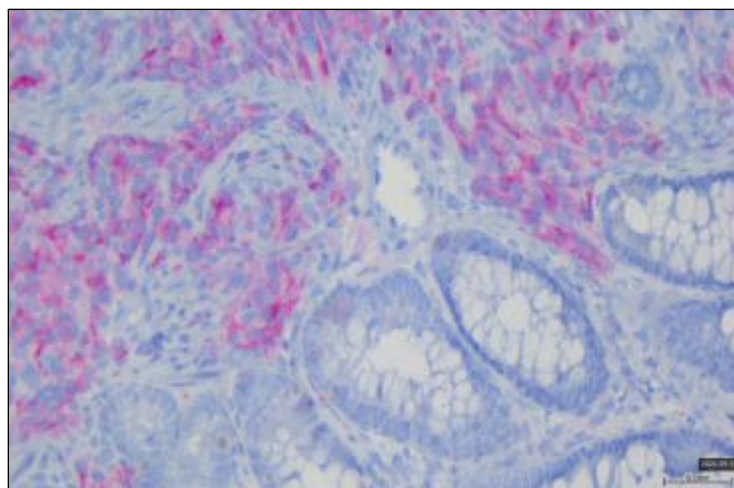


Figure 5: HMB45 immunohistochemical staining demonstrating diffuse cytoplasmic positivity in the epithelioid and spindle tumor cells, supporting melanocytic differentiation

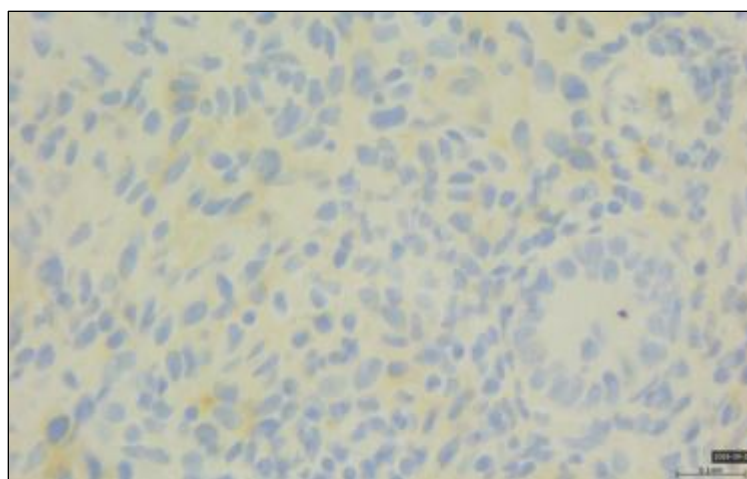


Figure 6: CD117 immunohistochemical staining showing no expression in tumor cells, arguing against a gastrointestinal stromal tumor (GIST).

Given the patient's frailty and multiple comorbidities, management focused on palliation, including endoscopic relief of the obstruction, nutritional support, and symptomatic treatment. The patient declined systemic anticancer therapy. Following duodenal stent placement, she experienced rapid clinical improvement, with resolution of obstructive symptoms and resumption of oral intake. She was subsequently referred for specialist oncological follow-up.

3 DISCUSSION

Malignant melanoma is a highly aggressive neoplasm characterized by an early propensity for hematogenous and lymphatic dissemination. The gastrointestinal tract is one of the most frequent sites of metastasis, identified in up to 60% of cases at autopsy, although clinical detection during life remains uncommon due to its often silent or nonspecific presentation [1].

Among gastrointestinal sites, the small bowel represents the most frequently involved segment, whereas duodenal metastases are rare and often underdiagnosed [2]. When present, they are usually detected at an advanced stage and may present with complications such as gastrointestinal bleeding, anemia, abdominal pain, or intestinal obstruction.

In the present case, the clinical presentation was dominated by a gastric outlet obstruction secondary to a circumferential duodenal lesion. This mode of presentation is particularly uncommon and reflects an advanced tumoral burden with significant luminal compromise. The association with a pulmonary nodule further supports the disseminated nature of the disease.

From a biological perspective, the presence of a systemic inflammatory response, reflected by elevated C-reactive protein (CRP), is noteworthy. Although nonspecific, elevated CRP in this context may be associated with tumor-related inflammation, tissue necrosis, or secondary inflammatory phenomena induced by tumor progression. Several studies have suggested that systemic inflammatory markers may correlate with tumor burden and poor prognosis in advanced melanoma [3].

Histologically, the diagnosis was confirmed by the presence of a diffuse proliferation of epithelioid and spindle-shaped cells with marked atypia and high mitotic activity. Immunohistochemistry remains essential for diagnostic confirmation, with SOX10, S100 protein, Melan-A, and HMB45 representing highly sensitive and specific markers for melanocytic differentiation [4]. The absence of cytokeratin expression effectively excluded a primary epithelial malignancy, reinforcing the metastatic nature of the lesion.

Therapeutically, management of gastrointestinal melanoma metastases depends on disease extent, symptom burden, and patient performance status. While surgical resection may be considered in selected cases with isolated lesions, most patients present with advanced disease requiring systemic therapy or palliative interventions [5]. In this case, given the patient's significant comorbidities and frailty, endoscopic stenting was chosen as a minimally invasive palliative approach, allowing rapid relief of obstruction and improvement in quality of life.

Overall prognosis in gastrointestinal metastatic melanoma remains poor, with median survival measured in months in advanced stages despite therapeutic advances [3]. However, the increasing role of immunotherapy has significantly modified the natural history of metastatic melanoma in selected patients, although its applicability remains limited in frail individuals with multiple organ dysfunction.

This case highlights several key learning points:

- Duodenal metastasis of melanoma, although rare, should be considered in patients with a history of melanoma presenting with obstructive gastrointestinal symptoms;
- Immunohistochemistry is essential for diagnostic confirmation;
- Endoscopic stenting represents an effective palliative strategy in high-risk surgical patients.

4 CONCLUSION

Duodenal metastasis of malignant melanoma is a rare cause of gastric outlet obstruction. This case emphasizes the importance of considering metastatic melanoma in patients with a history of melanoma presenting with gastrointestinal symptoms. Endoscopic stenting provides effective palliation in selected patients.

This case highlights:

- Duodenal metastasis of melanoma should be considered in patients with a history of melanoma presenting with gastric outlet obstruction.
- Imaging, endoscopy, and immunohistochemistry are essential for diagnosis, while endoscopic stenting offers effective palliation in frail patients with advanced disease.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors have no conflicts of interest to declare.

Statement of informed consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

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