Different Presentation and Appearance of Small-Bowel Metastasis of Malignant Melanoma: Two Cases and Review of the Literature

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Abstract

Melanoma is a malignant tumor that arises from melanocytes that are usually located in the skin, retina, meninges, and the anus. Melanoma of the gastrointestinal tract represents 1%-3% of the gastrointestinal system, which is most likely a metastasis of a skin, ocular, or anal primary lesion. It is a common malignancy whose prevalence is increasing. Most of the time, the metastatic lesion was diagnosed during post-mortem, but fewer than 9% of melanoma patients are diagnosed with gastrointestinal involvement while living. Small intestinal melanoma metastasis is not easily diagnosed. In this study, we reported 2 cases of intestinal-associated malignant melanoma that was diagnosed via capsule endoscopy and double-balloon enteroscopy. **Keywords:** Capsule endoscopy, double balloon enteroscopy, melanoma, small intestine

INTRODUCTION

Malignant melanoma (MM) can originate from cutaneous, anal, or ocular origins and is very well known for its propensity to metastasis to the intestines among the malignant tumors.¹ Malignant melanoma can also be a primary tumor of the intestines.¹ Patients with intestinal melanoma usually present with fatigue, nausea, vomiting, abdominal pain, anemia, and weight loss as any other intestinal tumor. Grossly, they can be as multiple or solitary polypoidal masses.²

Clinical, endoscopic, and radiological approach is usually needed to make the diagnosis of intestinal melanoma. Revolutionary and more sensitive techniques such as positron emission tomography (PET-CT), capsule endoscopy (CE), and double-balloon enteroscopy (DBE) have replaced the former, old diagnostic tools. Smedegaard is the first scientist to describe the coal-black appearance of the intestinal melanoma by CE.^{3,4}

Herein, we report 2 cases of MM with small bowel intestinal involvement diagnosed by CE and DBE.

CASE 1

A 35-year-old woman presented with fatigue and found to have severe iron deficiency anemia (IDA) (hemoglobin (Hb): 7 g/dL, hematocrit (Hct): 20%, mean corpuscular value (MCV): 70 fL, ferritin: 6 ng/mL, iron: 20 μ g/dL, total iron-binding capacity: 420 μ g/dL). She denied any overt bleeding including melena, hematuria, or menorrhagia. Gastroscopy and colonoscopy were normal, CE was planned, computerized tomography (CT) was performed before CE, and it was normal. Capsule endoscopy revealed a dark-colored mass in the proximal jejunum (Figure 1). In surgical resection specimen, melanoma was diagnosed by histopathological examination (Figure 2a and 2b). Detailed skin examination revealed a suspicious nevus on her shoulder which was shown to be a melanoma. She was referred to surgery for resection and oncology for chemotherapy. She has not had any disease recurrence during the follow-up period for 10 years. This case emphasizes the importance of a detailed search for the cause of severe IDA in the absence of an overt cause.

CASE 2

A 46-year-old woman receiving therapy for metastatic MM presented with nausea, vomiting, marked weight loss, dull abdominal pain for 3 months, and IDA. The laboratory tests revealed as follows: Hb level was 9.3 g/dL, Hct was 27%, MCV was 74 fL (85-95), and ferritin was 4.0 ng/ mL (28-365). The results of kidney function test and liver function test were in normal range. A contrast-enhanced abdominal CT imaging showed diffuse thickened small bowel wall. Upper gastrointestinal endoscopy showed tens (around 100) black-colored nodules, of multiple size (0.5-2.0 cm) on the duodenum as well as on the jejunum and ileum which was detected by DBE (Figure 3a, 3b). Histopathological examination of these lesions showed tumor infiltration in the lamina propria containing cytoplasmic black pigment.



Figure 1. Capsule endoscopy revealed a dark-colored mass in the proximal jejunum.

DISCUSSION

Metastases to the gut occur by hematogenous or lymphatic spread or by intraperitoneal seeding. Metastases are distinguished from primary tumors by the absence of a transition between normal and cancer cells and by histologic and immunohistochemical similarities between the primary and the secondary deposit, and gastrointestinal (GI) metastases are more commonly seen during autopsy than clinically because many are asymptomatic.⁵ The most common presentations are abdominal pain, anemia, GI bleeding, obstruction, and weight loss.⁵ Some metastases, particularly melanoma, may present decades after the primary tumor is found.⁶ One of our cases presented with obscure GI bleeding because of polypoid metastatic lesion and the other presented with weight loss and abdominal pain.

Primary melanoma of the small bowel is unique due to the difficulty to rule out a primary tumor. Regardless of its origin, intestinal melanoma has a marginal prognosis. The survival rate is only 10% at 5 years mark with a median expected survival of 4-6 months. There is no real consensus on management plan, and the mainstem of treatment remains surgery after the failure of all other adjuvant medications.⁷

According to Bender and colleagues⁸, there are 4 types of metastatic melanoma to the small bowel: cavitary, infiltrating, exoenteric, and polypoid, which can be sometimes difficult to differentiate. The multiple polypoid appearance in the submucosa (Figure 3a, 3b) is more common than a single mass (Figure 1) as in our first case. The other

MAIN POINTS

- Capsule endoscopy and double-balloon enteroscopy can increase the detection of the diagnosis of small bowel tumors.
- Melanoma is usually presented as a metastatic lesion in the small bowel.
- Prognoses of polypoid metastatic lesions are better than infiltrative lesions.

case has infiltrating lesions in the small bowel and the prognosis was bad. The latter patient died during the follow-up period.

The diagnosis is only made after the physical examination, lower and upper gastrointestinal endoscopy, and radiological assessment. Abdominal ultrasound, abdominal CT scan, lower and upper GI endoscopy, and PET scan are the main modalities used by clinicians. Patients with primary cutaneous melanoma and those with the metastatic variant who do not show any gastrointestinal symptoms are not recommended for radiographic assessment.9 The first step in the assessment is to start with an abdominal ultrasound although it is not sufficient to make a diagnosis. With only 60%-70% sensitivity, a contrast-enhanced abdominal CT scanning has the advantage of showing any extraluminal findings as well as better visualization of the bowels affected.¹⁰ Conventional endoscopic examination as a test has a limited sensitivity given that it cannot easily show the jejunum and ileum,¹¹ where CE and DBE have an important role. When combined, capsule endoscopy, DBE, and radiography have enhanced sensitivity in addition to better assessment of the segments involved in small bowel metastasis.12 Iron-deficiency anemia in the first patient was the indication to do an endoscopic examination of the whole of the intestines which revealed a lesion by the CE. Albert et al¹³ first reported MM metastases of the small bowel that were detected by CE.13

In such a situation, wide resection of the tumor with enough free margins together with a subtended wedge of mesentery to remove regional lymph nodes is recommended.¹³ Palliative surgery should be considered in selected patients. Complete resection with free surgical margins might significantly improve prognosis. Such an approach may increase



Figure 2. (A-B) In surgical resection specimen, melanoma was diagnosed by histopathological examination.





Figure 3. (A-B) Black-colored nodules, of multiple size (0.5-2.0 cm) on the duodenum as well as on the jejunum and ileum which was detected by DBE.

the disease-free period up to 10 years and the 5-year survival rate up to 40%.¹³ Our first case is still alive after 10 years.

Aggressive resection is not recommended in patients where the widespread disease is present, as it will not eradicate metastatic lesions from distant sites and, therefore, will not improve prognosis. Other modalities will include chemotherapy, immunotherapy, or biochemotherapy.¹⁴ Both neoadjuvant and adjuvant chemotherapy regimens have been under trial. Likewise, there is data suggestion for the use of adjuvant interferon (IFN) in these patients. It seems to be beneficial, especially in cases with lymph node involvement.¹⁵ Our second patient had significant disease progression in the fourth month of IFN treatment. Furthermore, immunotherapy with interleukin-2 was given alone or in combination with chemotherapy.

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REFERENCES

- Kohoutova D, Worku D, Aziz H, Teare J, Weir J, Larkin J. Malignant melanoma of the gastrointestinal tract: symptoms, diagnosis, and current treatment options. *Cells*. 2021;10(2):327. [CrossRef]
- Haendchen Bento L, Kazuyoshi Minata M, Pires Batista C, et al. Clinical and endoscopic aspects of metastases to the gastrointestinal tract. *Endoscopy*. 2019;51(7):646-652. [CrossRef]
- McAuley C, McCullagh D, Johnston SD. Melanoma: more THAN skin deep. Ulster Med J. 2022;91(1):58-59.
- Smedegaard J, Adamsen S. Metastatic malignant melanoma of the small intestine: capsule endoscopic appearance. *Endoscopy*. 2007;39(suppl 1):E209. [CrossRef]
- Kulahci O, Turan G. Primary and metastatic malignant melanomas of the digestive system. *Selcuk J.* 2020;36(4):300-306.
- Syed HR, Shekar S, Aravantagi A. Melanoma and the gastrointestinal (GI) tract: maintaining a high index of suspicion. *Cureus*. 2021;13(2):e13408. [CrossRef]
- Timmers TK, Schadd EM, Monkelbaan JF, Meij V. Meijc survival after resection of a primary malignant melanoma of the small intestine in a young patient: report of a case case rep Gastroenterol. *Case Rep Gastroenterol.* 2013;7(2):251-260. [CrossRef]
- Bender GN, Maglinte DD, McLarney JH, Rex D, Kelvin FM. Malignant melanoma: patterns of metastasis to the small bowel, reliability of imaging studies, and clinical relevance. *Am J Gastroenterol*. 2001;96(8):2392-2400. [CrossRef]
- Wang J, Yang F, Ao WQ, Liu C, Zhang WM, Xu FY. Primary gastric melanoma: a case report with imaging findings and 5-year follow-up. *World J Gastroenterol*. 2019;25(44):6571-6578. [CrossRef]
- Bender GN, Maglinte DD, McLarney JH, Rex D, Kelvin FM. Malignant melanoma: patterns of metastasis to the small bowel, reliability of imaging studies, and clinical relevance. *Am J Gastroenterol*. 2001;96(8):2392-2400. [CrossRef]
- Crippa S, Bovo G, Romano F, Mussi C, Uggeri F. Melanoma metastatic to the gallbladder and small bowel: report of a case and review of the literature. *Melanoma Res.* 2004;14(5):427-430. [CrossRef]
- Spiridakis KG, Polichronaki EE, Sfakianakis EE, et al. Primary small bowel melanoma. A case report and a review of the literature. *G Chir.* 2015;36(3):128-132. [CrossRef]
- Albert JG, Gimm O, Stock K, Bilkenroth U, Marsch WC, Helmbold P. Small-bowel endoscopy is crucial for diagnosis of melanoma metastases to the small bowel: a case of metachronous small-bowel metastases and review of the literature. *Melanoma Res*. 2007;17(5):335-338. [CrossRef]
- Lianos GD, Messinis T, Doumos R, Papoudou-Bai A, Bali CD. A patient presenting with acute abdomen due to metastatic small bowel melanoma: a case report. J Med Case Rep. 2013;7:216. [CrossRef]
- Dillon AB, Lin K, Kwong A, Ortiz S. Immunotherapy in melanoma, gastrointestinal (GI), and pulmonary malignancies. *AIMS Public Health*. 2015;2(1):86-114. [CrossRef]