

Jejunal intussusception caused by metastatic scalp melanoma with synchronous gallbladder involvement: A case report

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Case Report

ABSTRACT

Adult jejunal intussusception due to metastatic melanoma originating from a scalp lesion represents an uncommon clinical entity. Despite being a relatively rare form of skin cancer, melanoma is known for its aggressive behaviour and high metastatic capacity. Although metastases to the gallbladder are infrequent, melanoma is considered the most prevalent source of secondary tumours in this organ. Gallbladder metastases often resemble asymptomatic polyps, solid lesions, or cholecystitis. These lesions are increasingly identified as incidental findings due to the advances in medical imaging. In this case, multislice computed tomography (MSCT) served as the primary diagnostic modality, identifying both the jejunal intussusception with an intraluminal lead point and multiple gallbladder polyps. We report a clinical course of a 65-year-old man with a history of scalp melanoma who presented with gastrointestinal symptoms. The patient underwent exploratory laparotomy, segmental resection of the jejunum with primary anastomosis, and cholecystectomy. Histopathological findings confirmed the diagnosis of metastatic melanoma involving the resected tissues. This report emphasizes an imperative of continuous monitoring and an early detection in melanoma survivors, as well as a critical role of timely surgical intervention in managing metastatic manifestations.

INTRODUCTION

Intussusception is a clinically significant gastrointestinal condition defined as the telescoping of a proximal segment of the bowel (the intussusceptum) into the lumen of an adjacent distal segment (the intussusciens).^{1,2} While it is the most common cause of intestinal obstruction in infants and early childhood, it is far less frequent in adults, accounting for only about 1% of all adult bowel obstructions.¹ In the adult population, the clinical presentation often differs from the classical paediatric triad of intermittent abdominal pain, vomiting, and “redcurrant jelly” stools.² Adult cases are more commonly associated with a pathological lead point, which is identified in 80–90% of instances.¹ Specifically, while benign lead points are frequent in small bowel intussusception, malignancy is the underlying cause in approximately 30–35% of small bowel cases and up to 65–70% of large bowel cases.¹

Melanoma, an aggressive neoplasm originating from melanocytes, is a notable cause of such lead points due to its high metastatic potential.³ Although it comprises only 1%–3% of all malignancies globally, the gastrointestinal tract (GIT) represents a frequent site for metastatic spread; autopsy findings reveal gastrointestinal involvement in 60% of patients diagnosed with malignant melanoma.^{3,4} The small intestine, especially the jejunum and terminal ileum, is the most commonly affected segment. Clinically, metastases to the gastrointestinal system often manifest as symptoms of bowel obstruction, with intussusception emerging as a predominant

contributing factor.³ Compared to other solid tumours, cutaneous melanoma is the leading cause of small bowel metastases, reported in 35% to 97% of cases, followed in frequency by metastases to the stomach, duodenum (5%–50%), and colon (5%–32%).⁵

The increased utilization of advanced imaging, particularly computed tomography (CT), has improved the detection of both symptomatic and transient, asymptomatic intussusception.¹ Abdominal CT scanning remains the gold standard, offering the highest sensitivity and a diagnostic accuracy of about 80% in identifying the lead point.^{6,7} However, identifying subtle intraluminal lead-point lesions demands considerable expertise from radiologists. When associated with a malignant lead point, such as metastatic melanoma, adult intussusception remains a surgical emergency due to the risks of intestinal ischemia, perforation, and complete mechanical obstruction.²

In adult patients, exploratory laparotomy followed by surgical resection of the affected bowel segment—with subsequent primary anastomosis—continues to be the definitive modality for both diagnosis and management.^{3,7,8} This procedure is typically performed on an emergency basis to save a patient's life, as symptoms of obstruction often appear only when the intussusception becomes severe. Ultimately, while elective surgery may be considered in selected situations, therapeutic decisions should be individualized based on the underlying pathological cause of the intussusception, with a primary emphasis on tumour resection.^{3,7,8}

CASE PRESENTATION

A 65-year-old man presented with a one-week history of progressive abdominal bloating, vertigo, nausea, vomiting, and melena. There was no prior history of similar gastrointestinal complaints. Four years before, the patient had a painful and pruritic scalp lesion with a central blackish discoloration, which was surgically excised. Histopathological examination confirmed malignant melanoma. Initial immunohistochemical analysis at that time demonstrated strong positivity for HMB (Human Melanoma Black)-45 in the majority of tumour cells, a Ki-67 proliferation index of approximately 30–40%, and focal chromogranin staining. However, detailed oncological staging and routine follow-up were not performed after the initial excision. The four-year interval between the primary diagnosis and current presentation suggests delayed metastatic progression.

On admission, abdominal multislice computed tomography (MSCT) revealed jejunal intussusception with a suspected intraluminal mass acting as a lead point. Additionally, multiple gallbladder polyps were identified. To expedite management of the acute obstruction, abdominal ultrasound and PET-CT were not performed before surgery. The patient subsequently underwent exploratory laparotomy, cholecystectomy, and segmental jejunal resection with primary anastomosis. Intraoperative findings revealed a darkly pigmented polypoid mass within the jejunum, causing the intussusception, along with multiple similar lesions in the gallbladder.

Histopathological examination of the resected specimens confirmed metastatic melanoma. Microscopically, the tumour consisted of atypical melanocytic cells with pleomorphic nuclei and prominent nucleoli. Follow-up immunohistochemical staining showed a profile consistent with the primary scalp lesion, including strong HMB-45 positivity and a high proliferative rate (Ki-67 index of 30–40%). While additional markers such as S-100 or Melan-A were not performed at our facility, these findings correlated with the patient's clinical history. Postoperatively, the patient had an uneventful recovery and was discharged after five days. At the two-week follow-up, the he remained in good condition with well-healed surgical wounds.

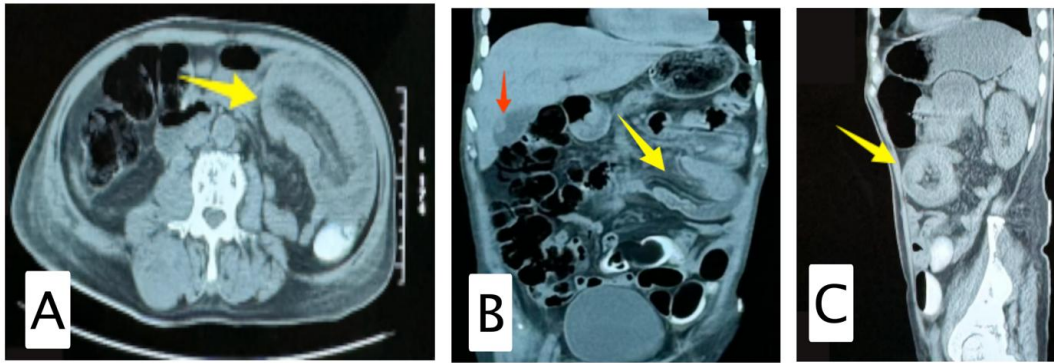


Figure 1. Abdominal MSCT images demonstrate jejunal intussusception. The yellow arrows indicate intussusception of the jejunum in coronal (A), axial (B), and sagittal (C) views. The red arrow in (B) indicates gallbladder polyps.

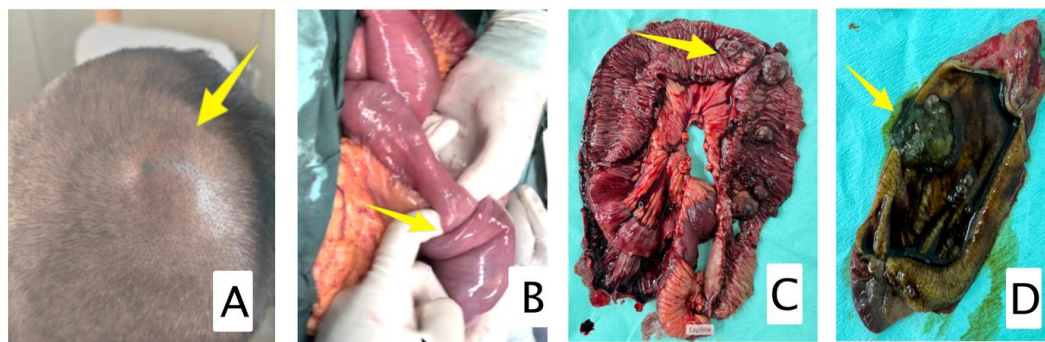


Figure 2: Clinical and intraoperative findings. (A) Scalp melanoma prior to excision (yellow arrow). (B) Intraoperative view of jejunal intussusception. (C) Multiple polypoid melanotic lesions in the jejunum. (D) Melanoma involving the gallbladder.

DISCUSSION

Melanoma is an aggressive neoplasm characterized by a high propensity for distant metastasis. Although it accounts for a relatively small proportion of skin cancers, it is responsible for the majority of skin cancer-related deaths due to its rapid progression and metastatic potential.⁹ Cutaneous melanoma arising from the head and neck region, including the scalp, is associated with poorer prognosis and higher mortality compared to other anatomical locations.¹⁰

Metastatic dissemination of melanoma frequently involves the gastrointestinal (GI) tract, which is considered the third most common site of distant spread.^{7,11} While clinical detection of GI metastases occurs in only 2–4% of cases during a patient's lifetime¹², autopsy findings reveal a much higher incidence of up to 60%.^{3,4} This significant discrepancy suggests that many gastrointestinal metastases remain asymptomatic and are often only identified when complications such as obstruction, bleeding, or intussusception arise.¹³ Among GI organs, the small intestine is the most frequently affected, likely due to its rich vascularization and specific molecular interactions such as the CCL25–CCR9 (Chemokine (C-C motif) ligand 25 - C-C Chemokine Receptor Type 9) axis, which facilitates tumour cell migration.¹⁴ Identifying these lesions during a patient's lifetime remains challenging, as most cases are discovered only after the onset of severe clinical symptoms.¹³

In contrast, gallbladder involvement is exceedingly rare and is typically associated with advanced metastatic disease. Despite its rarity, melanoma represents the most common primary tumour metastasizing to the gallbladder. Metastatic spread to the gallbladder is thought to occur primarily through hematogenous dissemination, with possible intrabiliary implantation.¹² These lesions are often asymptomatic and may only become clinically apparent when complications such as cholecystitis occur due to cystic duct obstruction.¹⁵

This case highlights a rare presentation of metastatic melanoma causing jejunal intussusception in an adult patient, accompanied by synchronous gallbladder involvement. Similar cases of small bowel intussusception caused by metastatic melanoma have been reported, in which intraluminal tumour masses act as pathological lead points.¹⁶ Consistent with previous reports, metastatic melanoma in the small bowel often manifests as multiple polypoid lesions that act as pathological lead points, resulting in intussusception, obstruction, or gastrointestinal bleeding.¹⁷ However, concurrent gallbladder metastasis, as observed in this patient, is uncommon and typically reflects advanced systemic dissemination.¹²

The interval between the primary melanoma and gastrointestinal metastasis in this case was approximately 4 years, consistent with previous reports of a latency period of 3–6 years, although longer intervals have also been documented.⁷ This delayed presentation emphasizes the importance of long-term surveillance in patients with a history of melanoma.

The decision to perform simultaneous jejunal resection and cholecystectomy was based on both therapeutic and diagnostic considerations. The jejunal lesion caused mechanical obstruction and intussusception, necessitating surgical resection. At the same time, the presence of multiple gallbladder polyps raised a strong suspicion of metastatic involvement, warranting cholecystectomy to achieve complete disease control and obtain a definitive histopathological diagnosis.

Histopathological examination confirmed metastatic melanoma in both the jejunum and gallbladder. In adults, intussusception is most commonly associated with an underlying pathological lesion, frequently malignancy, and therefore requires surgical management rather than non-operative reduction.¹⁸ Reduction prior to resection is generally avoided when malignancy is suspected due to the risk of tumour dissemination, including intraluminal seeding and venous spread.¹⁹

This approach is consistent with current evidence and established clinical practice for the management of adult intussusception. Surgical intervention remains the standard treatment, as supported by systematic review data demonstrating a high prevalence of underlying pathological lead points, particularly malignancy.²⁰ A tailored surgical strategy is recommended based on anatomical location. Resection without prior reduction is generally advocated in colonic intussusception due to the high risk of malignancy, whereas selective reduction followed by resection may be considered in small bowel intussusception, where a more selective approach can be applied.²¹ This supports the surgical approach performed in the present case.

The prognosis of patients with gastrointestinal metastases from melanoma remains poor, with reported median survival ranging from 6.2 to 13 months.³ However, complete surgical resection has been shown to significantly improve survival and symptom control.³ Postoperative management should involve a multidisciplinary approach, including consideration of systemic therapies such as immunotherapy or targeted therapy, depending on the patient's overall condition.²²

CONCLUSION

Metastatic melanoma should be considered in adult patients presenting with small bowel obstruction or intussusception, particularly in those with a prior history of melanoma. This case highlights the role of metastatic lesions as pathological lead points and emphasizes the rarity of synchronous gallbladder involvement. Early recognition and prompt surgical management, including bowel resection and cholecystectomy, are essential for optimal clinical outcomes.

ETHICAL APPROVAL

The Institutional Review Board of the Faculty of Medicine, Public Health, and Nursing, Universitas Gadjah Mada, approved this study (No. KE/FK/1145/EC/2024). Written informed consent was obtained from the patient for the publication of this case report.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest related to the research, authorship, or publication of this manuscript.

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DATA AVAILABILITY STATEMENT

All data supporting the findings of this case report are included within the article. Additional details may be obtained from the corresponding author upon reasonable request, in accordance with patient confidentiality and ethical guidelines.

SUPPLEMENTARY MATERIAL

There are no supplementary materials associated with this article. All relevant information is included in the main manuscript.

AUTHORS CONTRIBUTIONS

AYH was involved in patient management, data acquisition, study design, manuscript drafting, and revision, and serves as the corresponding author. FKA contributed to the study design, evidence collection, and critical revision of the manuscript. BAMT participated in data interpretation, manuscript editing, and formatting. All authors have reviewed and approved the final version of the manuscript.

DECLARATION OF USING AI IN THE WRITING PROCESS

The authors utilized artificial intelligence (AI) tools, such as ChatGPT by OpenAI, to assist in language refinement and grammar checking. All intellectual content, data interpretation, critical analysis, and final decisions were solely made by the authors. The use of AI did not replace any part of the authors' original contributions or critical thinking.

LIST OF ABBREVIATIONS

CT: Computed Tomography; MSCT: Multi-Slice Computed Tomography; GIT: Gastrointestinal Tract; HMB-45: Human Melanoma Black-45 (immunohistochemistry marker); Ki67: Proliferation marker protein Ki-67; CCL25: Chemokine (C-C motif) ligand 25; CCR9: C-C Chemokine Receptor Type 9

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