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Metastatic malignant melanoma with obstructive jaundice: a case report

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ABSTRACT

Metastatic malignant melanoma, which presents as obstructive jaundice due to common bile duct (CBD) involvement, is exceedingly rare. We present a case of a 36-year-old woman with metastatic malignant melanoma involving multiple organs including the lungs, pancreas, gallbladder, chest wall, and cervix, complicated by obstructive jaundice of unknown primary origin. Diagnostic evaluation revealed widespread metastases confirmed by histopathology and immunohistochemistry, positive for human melanoma black 45 and S-100. Treatment included placement of a self-expanding metallic stent in the CBD and initiation of pembrolizumab immunotherapy. This case highlights the diagnostic challenges and therapeutic considerations in managing metastatic melanoma with unusual biliary tract involvement.

Introduction

Malignant melanoma is a highly aggressive cutaneous malignancy known for its metastatic potential, yet spread to extracutaneous sites is relatively infrequent. Melanoma of unknown primary (MUP) is a rare entity, accounting for approximately 3.2% of all melanomas, and presents with metastasis to lymph nodes, subcutaneous tissues, and visceral organs (1). Metastasis to the bile duct is extremely rare, with very few cases involving the common bile duct (CBD) reported in the literature (2-6). Patients may present with painless jaundice and face diagnostic and therapeutic challenges due to the rarity and severity of the condition (2). We report a unique case of metastatic malignant MUP presenting with obstructive jaundice and extensive systemic involvement.

Case Presentation

A 36-year-old woman presented with abdominal pain and yellowish discoloration of the eyes for one month. On examination, she was icteric. Two palpable masses were noted: One measuring approximately 5×6 cm in the right hypochondrium and another 8×6 cm in the pelvic region. A 6×4 cm hard, fixed swelling was palpable over the right posterior

chest wall. Bilateral breast examination revealed increased nodularity. Per rectal and per vaginal examinations were unremarkable. No suspicious lesions were noted on the skin or mucosa upon evaluation by a multidisciplinary team including a dermatologist, oncologist, gynecologist, and general surgeon.

Blood work-up showed abnormal liver function with a total bilirubin level of 13.37 mg/dL (indirect 11.85 mg/dL) and an elevated alkaline phosphatase level of 575 U/L. Contrast-enhanced computed tomography (CT) of the abdomen and pelvis revealed enhancing lesions in the right lower lobe of the lung, gallbladder fundus, and a hypodense lesion in the pancreas, along with multiple periportal and peripancreatic lymph nodes. Bilateral adnexal lesions, heterogeneous cervix, and subcutaneous and intermuscular nodules were also noted.

Due to obstructive jaundice, endoscopic ultrasound with endoscopic retrograde cholangiopancreatography was performed, revealing a CBD stricture. A self-expanding metallic stent was placed after brush cytology and biopsy from the liver-adjacent lesion. Histopathology confirmed malignant melanoma. Fine needle aspiration cytology from the posterior chest wall mass and cervical biopsy, also confirmed metastatic melanoma. Immunohistochemistry was positive for human melanoma black 45 and S-100, and negative for chromogranin and GATA-3, supporting the diagnosis.

Positron emission tomography-CT revealed widespread metastases to the brain, bronchus (causing right middle lobe collapse), chest wall, left breast, adrenal glands, gallbladder, pancreas, right iliac fossa, left ischial tuberosity, adnexa, and cervix (Figure 1).

The patient was diagnosed with metastatic malignant MUP and initiated on immunotherapy treatment with pembrolizumab (every 3 weeks). After three cycles, treatment was continued in her hometown. Unfortunately, she showed a poor response to the therapy and discontinued it because of extensive disease burden.

Discussion

Malignant biliary obstruction is typically caused by primary tumors of the pancreas, bile ducts, liver, gallbladder, or ampulla of Vater. However, metastatic lesions from distant sites, such as the lungs, breasts, colon, and melanoma, can also lead to biliary obstruction (7). Melanoma metastases are often asymptomatic and widespread at diagnosis, with visceral metastases associated with poor prognosis (8).

Melanoma involving the pancreas and bile ducts may present in various forms: primary biliary melanoma, MUP involving the pancreas, secondary metastasis to the pancreas or bile ducts, or external compression of bile ducts by adjacent metastatic lymph

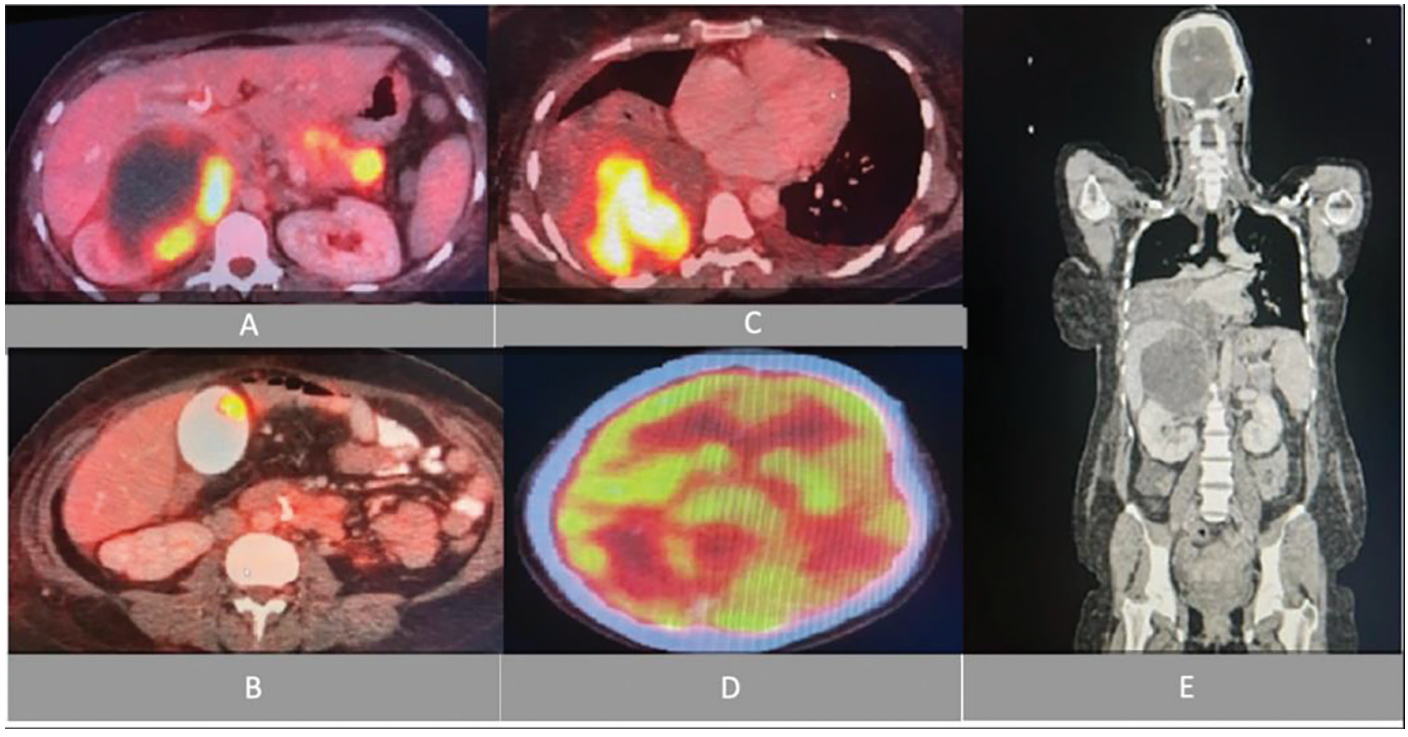

Figure 1. Positron emission tomography-computed tomography findings. (A) Increased FDG uptake in the right adrenal gland. (B) Distended gallbladder with contrast enhancement. (C) Increased FDG uptake in the basal segment of the lower lobe of the right lung. (D) Multiple metastatic deposits in the brain. (E) Coronal view showing widespread metastases

FDG: Fluorodeoxyglucose

nodes or liver lesions (7). Only around 18 cases of melanoma metastasizing to the CBD have been reported (3). Clinical presentation commonly includes painless jaundice, although hematobilia, cholangitis, or abdominal pain can occasionally occur (8).

MUP incidence ranges between 1.2% and 18% (9). First described by Das Gupta in 1963, MUP is defined as melanoma found in lymph nodes, subcutaneous tissues, or internal organs without any identifiable primary lesion on the skin, eyes, or mucosa (2). Theories explaining MUP include immune-mediated regression of the primary lesion, misdiagnosis of previously excised melanocytic nevi, or true primary development in internal organs or lymph nodes (2,9). Importantly, patients with MUP generally have prognoses comparable to those with known primary melanoma at the same stage (2).

While isolated bile duct metastasis may be surgically resectable, extensive systemic involvement, as in our patient, necessitates palliative interventions such as stenting to relieve obstructive jaundice (3). Systemic therapy is the cornerstone of management for unresectable advanced melanoma. Combining immunotherapy with other modalities, such as chemotherapy, radiotherapy, or targeted therapy, improves efficacy (10). Our patient also had multi-systemic involvement; therefore, surgical resection was not possible, and she was started on immunotherapy.

Melanoma's high immunogenicity makes it particularly responsive to immunotherapy. However, immune-related adverse events may occur due to immune system dysregulation (10,11). Several studies have demonstrated the efficacy of anti-programmed death-1 (PD-1) antibodies in melanoma. Topalian et al. (11), Brahmer et al. (12), Postow et al. (13), and Gambichler et al. (14) reported favorable clinical outcomes with PD-1 blockade. In addition, decreased levels of circulating PD-1+ regulatory T cells have been associated with reduced disease progression and better response to treatment (4).

Conclusion

This case highlights the importance of considering metastatic melanoma, even without a visible primary lesion, in patients presenting with obstructive jaundice and disseminated metastatic disease. Diagnosis of MUP requires thorough examination and exclusion of cutaneous, ocular, and mucosal primary sites. Immunotherapy remains a promising treatment, even in advanced disease, though challenges in management and prognosis persist. Multidisciplinary collaboration is crucial for optimizing care, improving outcomes, and ensuring comprehensive palliative and systemic treatment for such complex cases.

Ethics

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

Footnotes

Authorship Contributions

Design: A.D.S., S.H.J., Data Collection or Processing: A.D.S., S.H.J., Y.C.S., Analysis or Interpretation: Y.C.S., C.D.S., Literature Search: A.D.S., S.H.J., Y.C.S., V.S., Writing: A.D.S., S.H.J., Y.C.S., C.D.S., V.S.

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References

1. Scott JF, Gerstenblith MR. Noncutaneous melanoma [Internet]. Brisbane (AU): Codon Publications; 2018 [cited 2025 May 31]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK506988/
2. Colovic RB, Grubor NM, Jovanovic MD, Micev MT, Colovic NR. Metastatic melanoma to the common bile duct causing obstructive jaundice: a case report. *World J Gastroenterol.* 2007;13(5):813-815.
3. Okamoto T. Malignant biliary obstruction due to metastatic non-hepato-pancreato-biliary cancer. *World J Gastroenterol*. 2022;28(10):985-1008.
4. Aumpansub P, Angsuwatcharakon P, Wisedopas N, Ridtitid W, Rerknimitr R. Metastatic melanoma presenting as malignant biliary obstruction of the common bile duct demonstrated with single-operator digital cholangioscopy. *VideoGIE.* 2017;2(10):266-267.
5. van Bokhoven MM, Aarntzen EH, Tan AC. Metastatic melanoma of the common bile duct and ampulla of vater. *Gastrointest Endosc*. 2006;63(6):873-874.
6. Piltcher-da-Silva R, Sasaki VL, Hutten DO, Percicote AP, Trippia CH, Junior RAA, et al. Biliary tract melanoma metastasis mimicking hilar cholangiocarcinoma: a case report. *J Surg Case Rep*. 2021;2021(12):rjab549.
7. Onozawa H, Saito M, Yoshida S, Sakuma T, Matsuzaki M, Katagata N, et al. Multiple metastatic malignant melanoma presenting intraluminal gallbladder bleeding. *Int Surg.* 2014;99(5):600-605.
8. Egberts F, Bergner I, Krüger S, Haag J, Behrens HM, Hauschild A, et al. Metastatic melanoma of unknown primary resembles the genotype of cutaneous melanomas. *Ann Oncol.* 2014;25(1):246-250.
9. Ralli M, Botticelli A, Visconti IC, Angeletti D, Fiore M, Marchetti P, et al. Immunotherapy in the treatment of metastatic melanoma: current knowledge and future directions. *J Immunol Res.* 2020;2020:9235638.
10. Zhao Z, Zhang C, Zhou L, Dong P, Shi L. Immune checkpoint inhibitors and neurotoxicity. *Curr Neuropharmacol.* 2021;19(8):1246-1263.

11. Topalian SL, Hodi FS, Brahmer JR, Gettinger SN, Smith DC, McDermott DF, et al. Safety, activity, and immune correlates of anti-PD-1 antibody in cancer. *N Engl J Med*. 2012;366(26):2443-2454.

12. Brahmer JR, Tykodi SS, Chow LQ, Hwu WJ, Topalian SL, Hwu P, et al. Safety and activity of anti-PD-L1 antibody in patients with advanced cancer. *N Engl J Med*. 2012;366(26):2455-2465.

13. Postow MA, Callahan MK, Wolchok JD. Immune checkpoint blockade in cancer therapy. *J Clin Oncol.* 2015;33(17):1974-1982.

14. Gambichler T, Schröter U, Höxtermann S, Susok L, Stockfleth E, Becker JC. Decline of programmed death-1-positive circulating T regulatory cells predicts more favourable clinical outcome of patients with melanoma under immune checkpoint blockade. *Br J Dermatol.* 2020;182(5):1214-1220.