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Case report

Metastatic melanoma posing as a pelvic mass

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ABSTRACT

Pelvic metastasis of melanoma is extremely rare and may pose a diagnostic challenge. We present a case report of a female with a history of colon cancer who underwent exploratory surgery for a pelvic mass that was suspicious for ovarian malignancy. Pathology was consistent with both recurrent colon cancer as well as synchronous newly diagnosed metastatic melanoma.

1. Introduction

Melanoma is a deadly form of skin cancer with over 300,000 new cases annually worldwide (Arnold, 2022). The most common cause is ultraviolet light (UV) exposure to melanocytes and the typical presentation is on the lower extremities or back (Treatment, 2002). While melanoma is often localized at diagnosis and treated with surgical excision, metastasis is common and an important prognostic indicator (Zbytek, 2008). Common sites of spread include skin and subcutaneous tissue, lymph nodes, lungs, liver, brain, and bone (Meier, 2002). Initial identification of metastasis is most common in regional lymph nodes, but approximately 25% of patients develop metastatic disease directly in distant sites (Damsky et al., 2010). Pelvic metastases are an atypical location for melanoma and are more commonly seen in the retroperitoneal lymph nodes in the setting of lower extremity primary lesions (Trout, 2013). Herein, we report a case of metastatic melanoma that initially presented as a pelvic mass masquerading as an ovarian neoplasm, requiring gynecologic oncology evaluation.

2. Presentation

2.1. Initial presentation and management

A 76-year-old female with a past medical history significant for colon cancer initially presented to her primary care provider with lower abdominal discomfort for 2 weeks. She was diagnosed with colon cancer two years earlier via colonscopic polypectomy. At that time, the cancer was confined to a polyp, and no additional treatment was recommended. Her screening colonoscopy was normal; however, a CT of the abdomen and pelvis revealed a complex cystic and solid mass measuring 15.0 × 14.8 × 15.4 cm, reported to have originated from the right adnexa (Fig. 1). She was referred to gynecologic oncology for further evaluation.

At her gynecologic evaluation, her abdomen was noted to be grossly distended with a large, mobile mass that extended 3 cm above the umbilicus. A 4 cm irregular mass was noted to be prolapsing through the cervical os. Tumor markers were obtained which revealed a HE4 of 48, CA-125 of 142, and CEA of 2.7. A preoperative colonoscopy was attempted; however, evaluation was suboptimal as passage of the scope was extremely limited secondary to distortion from the mass. After thorough counseling, exploration was recommended given the high likelihood of malignancy. Due to her history of colon cancer, the surgical team consisted of both gynecologic oncology and colorectal surgery.

She underwent a total abdominal hysterectomy, bilateral salpingo-oophorectomy, resection of pelvic mass, small bowel resection with reanastomosis x2, sigmoid colectomy with end colostomy, and appendectomy. Intraoperative findings were significant for a 20 cm necrotic mass adherent to multiple loops of small bowel and mesentery. The origin of the mass was not clear at time of surgery. In addition, there were multiple enlarged firm lymph nodes in the mesentery that were unable to be resected without compromising the bowel's blood supply. The uterus, tubes, and ovaries were normal-appearing, and there was no evidence of disease on the liver, diaphragm, and peritoneum.

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Intraoperatively, she required 4 units of packed red blood cells and was transferred to the intensive care unit postoperatively. The patient's postoperative course was complicated by an ileus which resolved, and she was discharged home on postoperative day 13.

2.2. Pathology and disposition

Final pathology revealed metastatic melanoma occurring in association with recurrent moderately differentiated colonic adenocarcinoma. Both tumors occurred in close proximity but maintained distinct boundaries (Fig. 2). The tumors were noted to involve the pelvic mass, small bowel, sigmoid colon, and surrounding soft tissues. Immunohistochemical staining performed on the pelvic mass revealed cells of melanoma positive for S100 and SOX10 while negative for pan-cytokeratin, cytokeratin 7, cytokeratin 20, CD45, CD3, CD20, and PAX 8 which is supportive of the diagnosis. The colon adenocarcinoma was positive for CDX2 (Fig. 3). In addition, the melanoma, but not the colon adenocarcinoma, involved 6 out of the 16 mesenteric lymph nodes. The uterus, cervix, fallopian tubes, and ovaries were not involved by cancer. The prolapsing cervical mass noted was a leiomyoma. She is currently undergoing treatment with medical oncology, with the plan for Ipilimumab and Nivolumab every 21 days for 4 cycles followed by maintenance Nivolumab. In addition, she underwent a full cutaneous assessment with no obvious melanoma primary.

3. Discussion

Melanoma is often considered the most serious skin malignancy. Around 50% of melanomas have mutations involving *BRAF*, with 90% occurring as a single nucleotide mutation at codon 600 (Ascierto, 2012). In addition, *BRAF* mutations are seen in around 10% of colorectal cancers and often correspond with a worse prognosis due to a poor response to chemotherapy (Ciombor, 2022). Interestingly, genetic testing of our patient was positive for *BRAF* mutations for the melanoma but not the colon adenocarcinoma. Although melanoma can metastasize anywhere in the body, metastasis to the pelvis is rare and therefore can pose a diagnostic challenge (Trout, 2013). Pelvic melanoma, if present, is typically found in the retroperitoneal lymph nodes as a metastasis from a lower extremity primary (Trout, 2013). Prior case reports have described roughly 77 cases of metastatic melanoma to the ovary and 31 cases of primary ovarian melanoma (Sbitti, 2011). However, there is a paucity of literature describing direct pelvic metastasis of melanoma presenting as a mass in the setting of uninvolved ovaries, and thus the true incidence of this phenomenon is unknown. A small percentage of melanomas present as distant metastases without an established primary lesion. This may further contribute to melanoma being lower or nonexistent on the preoperative differential diagnosis of a pelvic mass for a gynecologic oncologist (Scott and Gerstenblith, 2018).

Roughly 6–12% of patients presenting for initial gynecologic oncology evaluation for suspected ovarian neoplasm are found to have metastatic disease from another primary, with the most common being colon adenocarcinoma (Moore, 2004; Lin, 1993). This is important as a pelvis mass of non-gynecological origin may require a multidisciplinary approach. Concurrent adenocarcinoma of the colon and metastatic melanoma in our case highlights the significance of considering possibilities outside of a gynecologic etiology for a pelvic mass. Collaborative efforts within a multidisciplinary team provides gynecologic oncologists with a comprehensive clinical picture necessary for selection of the most appropriate treatment plan and better patient outcomes (Mulligan, 2021). Our team consisted of gynecologic oncology, colorectal surgery, medical oncology, and pathology. Involvement of colorectal surgery in her care proved to be an important aspect of management not only due to her history of colon cancer, but as the final pathology confirmed a recurrence.

4. Conclusion

We present a case of a female with a pelvic mass suspicious for an ovarian malignancy who was postoperatively diagnosed with metastatic melanoma existing concurrently with recurrence of known colon carcinoma. Metastatic melanoma presenting as a pelvic mass with uninvolved ovaries poses a diagnostic challenge as there is limited literature describing this phenomenon. Utilization of a multidisciplinary approach in the management of a pelvic mass of non-gynecologic origin can help facilitate necessary adjuvant treatment plans and likely improve patient outcomes.

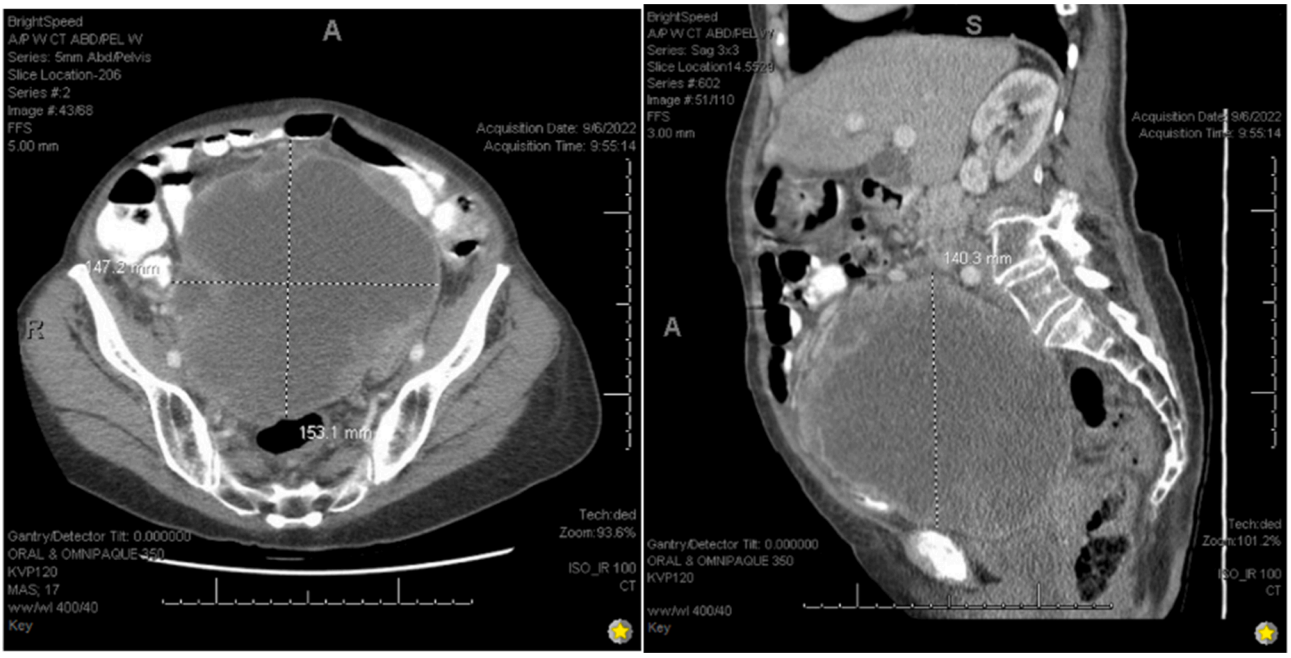

Fig. 1. CT of mass.

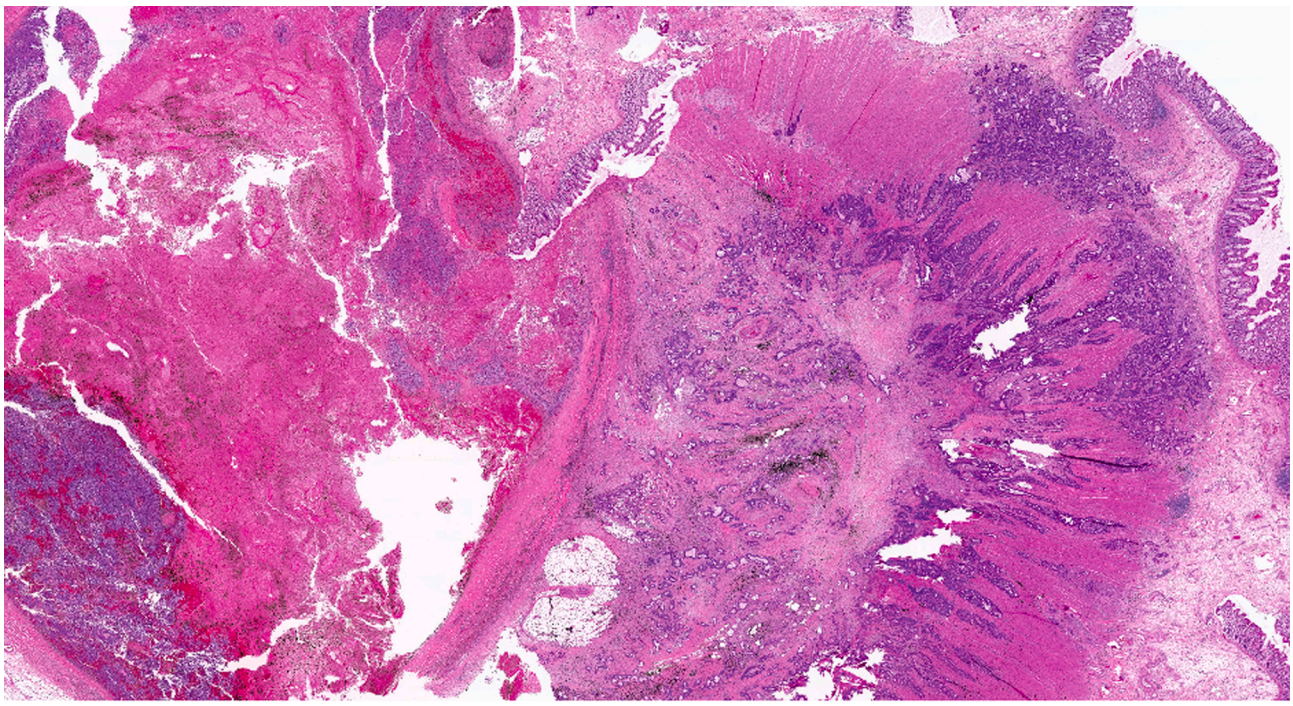

Fig. 2. Pathology of melanoma and colon cancer side by side. The malignant melanoma on the left exhibits sheets of poorly differentiated cells and extensive tumor necrosis. On the right, the colorectal adenocarcinoma shows transmural infiltration of the bowel wall with extension into the pericolonic soft tissues. Both components of the collision tumor are separated by a band of fibrocollagenous tissue (center).

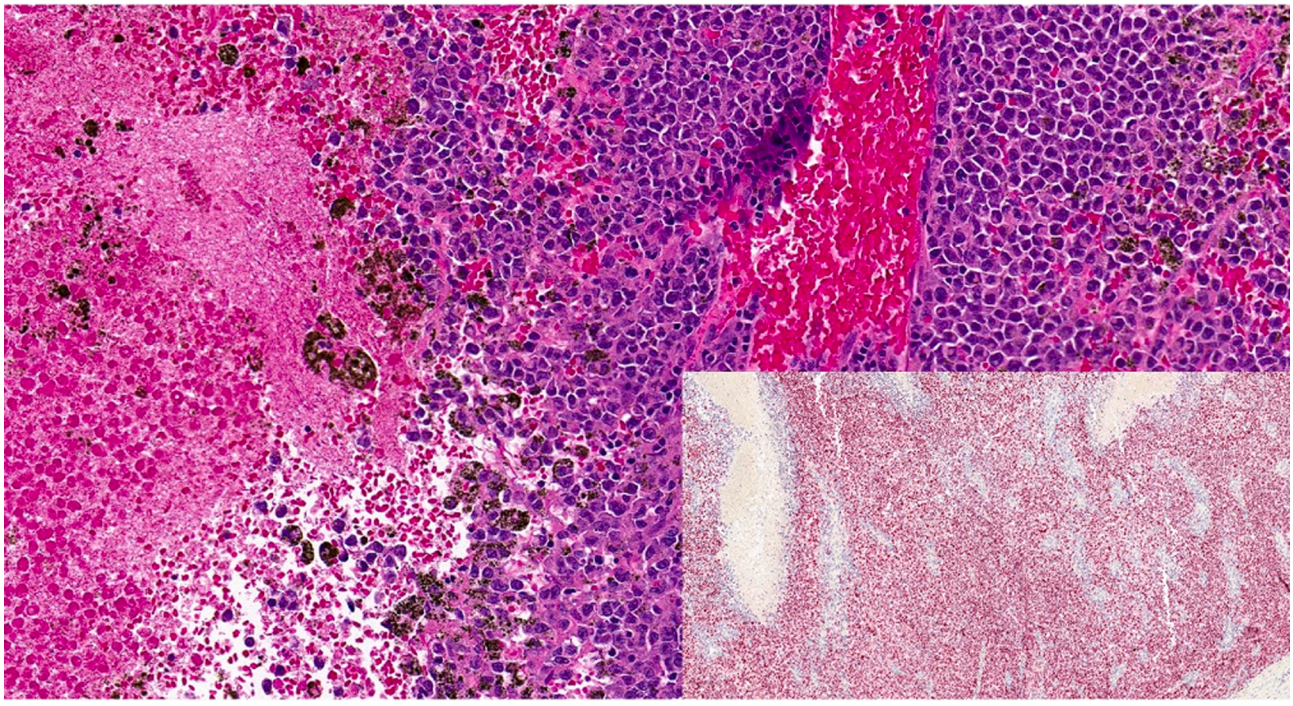

Fig. 3. Melanoma immunohistochemical stain. High power image of the malignant melanoma showing sheets of malignant cells with large hyperchromatic nuclei, adjacent areas of tumor cell necrosis, and clumps of dark brown melanin pigment (H&E × 100). Inset shows diffuse positivity of the tumor cells for sox10 (red chromagen) confirming the diagnosis of melanoma. Clusters of necrotic tumor cells show lack of staining.

Statement of Consent

"Written informed consent was obtained from the patients for publication of this case series and accompanying images. IRB exemption was received from the University of Rochester Research Subjects Review Board. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request".

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Author contributions

AZ conception, manuscript writing, editing. NZ manuscript writing, manuscript editing. OS pathology review, manuscript editing. RM manuscript editing. RT manuscript editing. CA manuscript editing. BD manuscript editing. NN pathology review, manuscript editing. AS conception, manuscript editing, supervision.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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