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CASE REPORT

Delayed metastatic endometrial carcinoma mimicking primary colon adenocarcinoma: A surprise histopathological finding

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Key Clinical Message

Colorectal cancer is the third most common malignancy worldwide, with an increasing incidence. Colonic metastasis is a rare occurrence; thus, misdiagnosis is common. Immunohistochemistry facilitates accurate diagnosis and subsequent management.

Abstract

Most cancers in the colon are primary colorectal cancers, however metastasis from another primary is possible, albeit rare. Endometrial cancer metastasis to the colon is a rare occurrence and is only described in a handful of cases. We describe a rare case of metastatic endometrial cancer in the colon presenting 5 years post radical hysterectomy and adjuvant radiotherapy in a 62-year-old female. She presented with a 1-week history of right upper quadrant pain, with no other associated symptoms. She was presumed to have a primary colorectal cancer based on her colonoscopy and CT findings; later proven otherwise by immunohistochemistry (IHC). Endometrial cancer metastasis to the colon is rare, thus misdiagnosis can easily occur. Currently, there are 6 similar cases reported in the literature, all occurring in the absence of colorectal endometriosis. This case illustrates the relative importance of considering colon as a potential site for metastasis of endometrial cancer and the utility of IHC in aiding diagnosis and guiding further management.

KEYWORDS

colon metastasis, endometrial cancer, rectal metastasis, unusual site

1 | INTRODUCTION

Colorectal cancer (CRC) is the third most common cancer worldwide, accounting for 10% of all cancers and 9.4% of all cancer-related deaths in 2020.[1] By 2030, the number of new CRC diagnoses is expected to increase by 60%, to over 2.2 million new cases worldwide. The rising incidence of CRC is mainly attributed to the increasing prevalence of obesity, alcohol and meat consumption, sedentary lifestyle, and an aging population.[2] Patients with CRC may be asymptomatic at diagnosis or have gastrointestinal symptoms such as bleeding, pain, change in bowel habit or bloating.[3] A small subset of patients may even present with non-GI symptoms.[1] Approximately 1% of all colon cancers are metastatic lesions from distal primaries.[4] Recurrent endometrial carcinoma typically metastasizes to the peritoneum or lungs, whilst it is atypical for them to spread to the liver, adrenals, brain, bones, and soft tissue.[5] In the current literature, endometrial cancer metastasis to the colon is a rare occurrence and is only described in a handful of cases. In this article, we describe an unusual case of endometrial cancer with a delayed metastasis to the colon.

FIGURE 1 Initial CT (top—axial, bottom—coronal) demonstrating caecal thickening.

2 | CASE HISTORY/ EXAMINATION

A 62-year-old female presented to a private gastroenterologist with 1 week of right upper quadrant pain, with no alterations in bowel habit, per rectum bleeding or melaena. This was on a background of grade 3 stage 1B endometrioid adenocarcinoma, managed by laparoscopic total abdominal hysterectomy (TAH), bilateral salphingo-oophorectomy (BSO), bilateral pelvic node dissection and omental biopsy, followed by adjuvant radiotherapy, 5 years prior. A colonoscopy done 6 months after TAH-BSO for a positive fecal occult blood test showed diverticular disease and a colonic polyp, which was removed. She has a family history of lung cancer in her father and maternal aunt. There was no family history of CRC.

On examination, she was systemically well and haemodynamically normal. Her gastrointestinal examination was normal, abdomen soft, non-tender, and there were no palpable masses, organomegaly or lymphadenopathy. Digital rectal exam was also unremarkable. Serum cardioembryonic antigen (CEA) was 1.7 ug/L (normal) and her other bloods were unremarkable.

CT of her abdomen identified an irregular circumferential caecal thickening (Figure 1), with no adenopathy or metastatic disease, and uncomplicated sigmoid and descending colon diverticulosis. Colonoscopy showed a 4 cm centrally ulcerated, fungating lesion in the caecum (Figure 2) and preliminary histology of the caecal biopsy identified adenocarcinoma.

She was thought to have a primary colorectal adenocarcinoma based on these findings and underwent a robotic right hemicolectomy, with no anesthetic or surgical complications. Intraoperatively, she was found to have a locally advanced caecal tumor involving the peritoneal side walls, with no visible liver or peritoneal disease.

Histologically, full thickness invasion of the bowel wall (from serosa to ulcerated mucosa) by the tumor was observed, with no nodal involvement of the 22 resected lymph nodes. On immunohistochemistry (IHC), the resected tumor was stained positive for cytokeratin 7 (CK7), paired-box gene 8 (PAX8) and estrogen receptor (ER). It was weakly positive to CDX 2, and negative to cytokeratin 20 (CK20) and special AT-rich sequence-binding protein 2 (SATB2). Similar results were observed on IHC of the caecal biopsies taken during the colonoscopy (Figure 3). These findings were suggestive of a metastatic endometrioid carcinoma. She recovered well postoperatively and was promptly commenced on adjuvant chemotherapy.

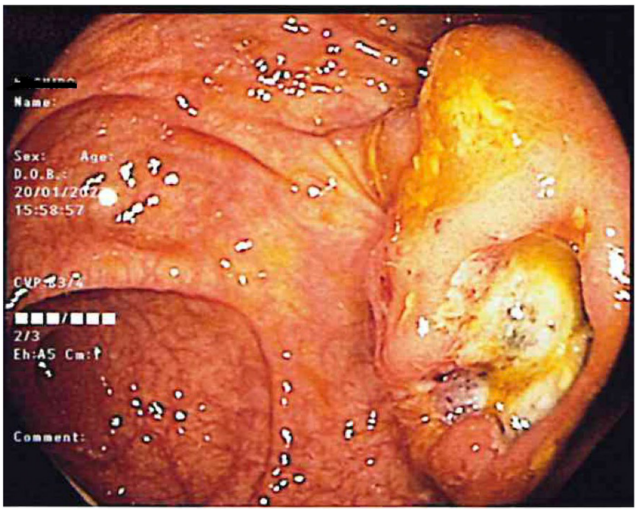

FIGURE 2 A 4 cm ulcerated, fungating lesion revealed during colonoscopy.

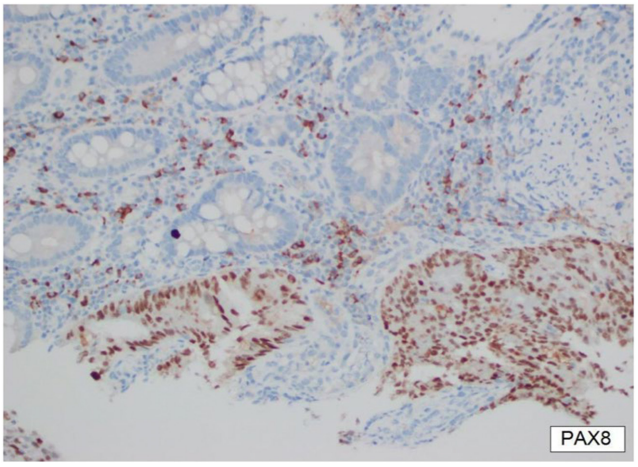

FIGURE 3 Tumor cells from the caecal biopsy staining positive (brown) for PAX8 on IHC.

3 | DISCUSSION

Colonic metastases are a rare occurrence. The most common pathways in which metastases reaches the colon are via the lymphatics or vascular system, direct extension (i.e., invasion of contiguous colon wall), or peritoneal seeding.[6] Primary cancers that metastasize to the colon typically arise from the lung, breast, ovaries, prostate, kidneys, skin, stomach, or hepatobiliary system.[4] Metastatic lesions to the colon from an endometrial primary are even more uncommon, thus easily being confused for a primary colorectal cancer. To our knowledge, only six similar cases have been described in the literature (Table 1).

As in the case described above, Anstadt et al.[7] Wou et al.[8] and Hubers et al.[9] all present a case of stage 1 endometrial cancer metastasizing to the colo-rectum status post-surgical management and were all presumed to be primary CRCs based on imaging and scope findings, proven otherwise by IHC. This highlights the importance of IHC to aid in diagnosis, particularly in poorly differentiated carcinomas that appear morphologically similar. On IHC, CRCs are typically positive for CK20 and CDX2, and negative for CK7 and ER.[10] The converse is true for endometrial carcinomas[10]; as observed in the case above.

Koury et al.[11] described a case of a 67-year-old with stage 1 endometrial cancer recurring in the sigmoid colon 15 months after neoadjuvant radiotherapy, who initially presented with haematochezia. Jauregui et al.[12] reported a case of disease recurrence of stage 3b endometrial cancer to the sigmoid colon 1 month after TAH-BSO, in an 89-year-old who presented with haematochezia. Finally, Molnar et al.[13] presented a case of a 71-year-old who presented with sub-occlusive syndrome, weight loss and anemia, found to have recurrence of stage 3b serous endometrial cancer 2 years status post-surgical management and adjuvant chemoradiotherapy. Intraoperatively, she was found to have multiple metastatic lesions in the colon (ascending, transverse and descending) and the gastric antrum (with invasion of the lower pole of spleen).

A retrospective cohort study by Sohaib et al.[14] showed that the peritoneum was one of the most typical sites of recurrent endometrial cancer, accounting for 28% of relapses. Additionally, malignant transformation of colorectal endometriosis resulting in the development of endometrioid carcinoma is a rare but well-known complication, typically proven by IHC.[15] Interestingly in the case presented, the colonic metastasis occurred in the absence of peritoneal disease and any endometriosis.

Finally, considering the existence of reports of diagnostic errors in pelvic tumors of different origins, from organs anatomically close but completely incompatible in pathology,[16,17] it is essential to accurately diagnose the origin of tumors if there is the slightest doubt, before taking action.

4 | CONCLUSION

This case report highlights a rare occurrence of delayed metastatic endometrial carcinoma to the colon which was identified following surgical resection. It underscores the significance of including the colon as a possible site of metastasis in endometrial cancer, albeit uncommon, and the invaluable utility of IHC in facilitating an accurate diagnosis and possibly subsequent management. In this case, preoperative evaluation through to management of caecal mass would not have changed, regardless of delayed IHC findings, as resection was still indicated and performed in a standard oncological manner.

TABLE 1 Summary of cases of metastatic endometrial cancer to colon.

References	Age, presenting complaint	Past medical history	Time to recurrence (following Mx)	Scope findings	Diagnosis	IHC	Management
Anstadt et al.[7]	70 years, per rectal bleeding	Endometrial cancer—FIGO Grade 2, Stage 1b—TAH-BSO alone	1 year	Colonoscopy—obstructing, intraluminal recto-sigmoid mass	Presumed primary CRC—Proven otherwise by IHC	CK7 (+) ER (+) CK20 (−) CDX2 (−)	Not included in paper
Wou et al.[8]	59 years, Abdominal cramps, Per rectal bleeding and Diarrhea	Endometrial cancer—FIGO Grade 2, Stage 1b—TAH-BSO alone Breast cancer	6 years	Flexible sigmoidoscopy—suspected malignant lesion 10 cm from anorectal verge	Presumed primary rectal cancer—Proven otherwise by IHC	CK7 (+) CK20 (−) CDX2 (−)	Anterior resection + adjuvant chemotherapy
Hubers et al.[9]	75 years, Per rectal bleeding and Lower abdominal pain	Endometrial cancer—FIGO Grade 1, Stage 1b—TAH-BSO alone	3 years	Colonoscopy—2 cm, non-obstructing ulcerated mass in sigmoid colon	Metastasis from prior endometrial adenocarcinoma	CK7 (+) ER (+) PAX8 (+) CK20 (−) CDX2 (−) WT1 (−)	Exploratory laparotomy (low anterior resection and small bowel resection) + adjuvant chemotherapy
Koury et al.[11]	67 years, Haematochezia	Endometrial cancer—FIGO Stage 1a—Radiotherapy alone	15 months	Colonoscopy—4 cm, non-obstructing, friable, ulcerated mass in sigmoid colon	Metastasis from prior endometrial adenocarcinoma	Not included in paper	Surgical resection of affected colon (not specified) + adjuvant radiotherapy
Jauregui et al.[12]	89 years, Haematochezia	Endometrial cancer—FIGO Stage 3b—TAH-BSO alone—Developed DVT post-op, commenced on anticoagulation	1 month	Esophagogastro duodenoscopy—normal Colonoscopy—severe stricture in distal sigmoid colon	Metastasis from primary endometrial carcinoma	CK7 (+) ER (+) PAX8 (+) CK20 (−) CDX2 (−)	Palliative care
Molnar et al.[13]	71 years, Sub-occlusive syndrome, Weight loss and Anemia	Endometrial cancer—FIGO Stage 3b—TAH-BSO and adjuvant chemoradiotherapy	2 years	Colonoscopy—infiltrative, hemi-circumferential, friable mass in ascending colon	Multiple metastasis of endometrial adenocarcinoma to colon and stomach (invading lower pole of spleen)	CK7 (+) CD20 (−)	Subtotal colectomy, distal gastrectomy, splenectomy and citroreductive pelvic peritonectomy + adjuvant therapy (not specified)

Abbreviations: BSO, bilateral salphingo-oophorectomy; CK, cytokeratin; CRC, colorectal cancer; ER, estrogen receptor; FIGO, International Federation of Gynecology and Obstetrics; IHC, immunohistochemistry; PAX8, paired-box gene 8; TAH, total abdominal hysterectomy; WT1, wilms tumor-1.

AUTHOR CONTRIBUTIONS

Hui Yuan Foong: Validation; writing – original draft. **Jian Blundell:** Conceptualization; resources; writing – review and editing. **Cameron Law:** Conceptualization; project administration; writing – review and editing. **Ross Warner:** Supervision; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no relationships, including financial or professional, which may pose a competing interest.

DATA AVAILABILITY STATEMENT

The authors confirm that the data supporting the findings of this study are available within this article. Raw data that support the findings of this study are available from the corresponding author, upon reasonable request.

ETHICS STATEMENT

As this was a single patient case report HREC approval was not required for this institution, however all measures have been undertaken by the researchers to obtain appropriate written participant consent.

CONSENT

Written informed consent was obtained from the patient to publish this report in accordance with the journal's patient consent policy.

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REFERENCES

1. Xi Y, Xu P. Global colorectal cancer burden in 2020 and projections to 2040. *Transl Oncol*. 2021;14(10):101174. doi:10.1016/j.tranon.2021.101174
2. Rawla P, Sunkara T, Barsouk A. Epidemiology of colorectal cancer: incidence, mortality, survival, and risk factors. *Prz Gastroenterol*. 2019;14(2):89-103. doi:10.5114/pg.2018.81072
3. Smith D, Ballal M, Hodder R, Soin G, Selvachandran SN, Cade D. Symptomatic presentation of early colorectal cancer. *Ann R Coll Surg Engl*. 2006;88(2):185-190. doi:10.1308/003588406X94904
4. Galanopoulos M, Gkeros F, Liatsos C, et al. Secondary metastatic lesions to colon and rectum. *Ann Gastroenterol*. 2018;31(3):282-287. doi:10.20524/aog.2018.0244
5. Kurra V, Krajewski KM, Jagannathan J, Giardino A, Berlin S, Ramaiya N. Typical and atypical metastatic sites of recurrent endometrial carcinoma. *Cancer Imaging*. 2013;13(1):113-122. doi:10.1102/1470-7330.2013.0011
6. Wigh R, Tapley ND. Metastatic lesions to the large intestine. *Radiology*. 1958;70(2):222-229. doi:10.1148/70.2.222
7. Anstadt MJ, Lapetino SR, Defnet A, Kapur U, Shoup M. Endometrial adenocarcinoma metastatic to the colon masquerading as a primary colon cancer. *J Gastroenterol Hepatol Res*. 2012;1(3):40-43.
8. Wou C, Chaston N, Doughan S. Mistaken identity: endometrial or rectal cancer? *BMJ Case Rep*. 2014;2014:bcr2013202874. doi:10.1136/bcr-2013-202874
9. Hubers JA, Soni A. A rare case of endometrial cancer metastatic to the sigmoid colon and Small bowel. *Case Rep Gastrointest Med*. 2017;2017:9382486. doi:10.1155/2017/9382486
10. Chu P, Wu E, Weiss LM. Cytokeratin 7 and cytokeratin 20 expression in epithelial neoplasms: a survey of 435 cases. *Mod Pathol*. 2000;13:962-972.
11. Koury E, Kawar H, Chahla E. Metastatic endometrial cancer to the sigmoid colon masquerading as primary colorectal cancer. *Cureus*. 2021;13:e19646. doi:10.7759/cureus.19646
12. Jauregui A, Gajendran M, Loganathan P, Padilla A, Qiao J, Elhanafi S. Rare distal metastasis of endometrial adenocarcinoma impersonating as primary colon cancer. *J Investig Med High Impact Case Rep*. 2021;9:9. doi:10.1177/23247096211039943
13. Molnar C, Dobru ED, Copotoiu C, et al. Multiple colonic and gastric metastasis of endometrial adenocarcinoma—case report. *Jurnalul de Chirurgie (Iaşi)*. 2013;9:339-343.
14. Sohaib SA, Houghton SL, Meroni R, Rockall AG, Blake P, Reznek RH. Recurrent endometrial cancer: patterns of recurrent disease and assessment of prognosis. *Clin Radiol*. 2007;62(1):28-36. doi:10.1016/j.crad.2006.06.015
15. Petersen VC, Underwood JC, Wells M, Shepherd NA. Primary endometrioid adenocarcinoma of the large intestine arising in colorectal endometriosis. *Histopathology*. 2002;40(2):171-176. doi:10.1046/j.1365-2559.2002.01313.x
16. Maleki A, Layegh P, Seddighian SH, Khosravi M, Ariamanesh M, Dehghani M. A perforated sigmoid colon cancer initially diagnosed as a tubo-ovarian abscess: a teaching case. *Clin Case Reports*. 2022;10:e05982. doi:10.1002/ccr3.5982
17. Fan G, Jin X, Huang Y, He B. Pelvic splenosis was misdiagnosed as pelvic tumor: a case report. *Asian J Surg*. 2023;46(8):3269-3270. doi:10.1016/j.asjsur.2023.03.058

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