



Case report

An isolated vaginal metastasis from rectal cancer

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H I G H L I G H T S

- Isolated vaginal metastasis from colorectal cancer are extremely rare.
- Synchronous isolated vaginal metastasis from rectal cancer is reported.
- To evaluate gynecological symptoms of female patient is important.
- MRI study is useful to detect and diagnose vaginal lesion.

A R T I C L E I N F O

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A B S T R A C T

Introduction: Isolated vaginal metastases from colorectal cancer are extremely rare. There are only a few reported cases in the English literature, and the characteristics of such cases of metastasis remain relatively unknown.

Presentation of case: We present a case of isolated vaginal metastasis from rectal cancer in a 78-year-old female patient. The patient had no symptoms related to vaginal tumor. Magnetic resonance imaging (MRI) showed thickening of the middle rectum and a vaginal tumor. Biopsy from the vaginal tumor showed adenocarcinoma, similar to the rectal lesion. Low anterior resection with ileostomy, hysterectomy, and transvaginal tumor resection was performed. After nineteen months, computed tomography scan revealed multiple lung metastases and recurrent tumor in the pelvis. The patient refused chemotherapy and is alive three months after developing recurrent disease.

Discussion: Most cases of primary vaginal carcinoma are squamous cell carcinoma. Other histologic types such as adenocarcinoma are usually metastatic lesions. Primary lesions associated with metastatic vaginal adenocarcinoma are most often the uterus, and are very rarely from the colon or rectum. We review previous case reports of isolated vaginal metastases from colorectal cancer and discuss their symptoms, treatments, and outcomes.

Conclusion: We should keep the vagina within the field of view of pelvic MRI, which is one of the preoperative diagnostic tools for colorectal cancer. If female patients show gynecological symptoms, gynecological examination should be recommended. Isolated vaginal metastases are an indication for surgical resection, and adjuvant chemotherapy is also recommended.

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1. Introduction

Vaginal metastases from colorectal cancer are very rare entities, and most of these patients also have other metastatic lesions in locations such as the liver or lung. Isolated vaginal metastases are extremely rare, with very few previous reports in the literature.

2. Presentation of case

A 78-year-old female visited her local physician complaining of constipation and abdominal fullness for two months. The patient denied any gynecologic symptoms. Her past medical history included diabetes mellitus, hyperlipidemia, and hypertension treated with oral medication. Digital rectal examination revealed a rectal tumor 10 cm from the anal verge. Colonoscopy demonstrated a type-2 tumor occupying the full circumference of the middle rectum. Biopsy revealed a well-differentiated adenocarcinoma. She was referred to Jichi Medical University Hospital for further treatment.

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Laboratory data showed hemoglobin of 10.8 g/dl and elevated carcinoembryonic antigen (CEA) at 13.9 ng/ml. Abdominal computed tomography (CT) scan revealed a large rectal tumor. No lymphadenopathy or distant metastases were observed. Magnetic resonance imaging (MRI) revealed the rectal tumor as well as suspected direct invasion to the uterus. A 16 mm vaginal tumor separate from the rectal tumor was also identified (Fig. 1). The vaginal tumor was hyper-intense on T2w (T2-weighted) images. A gynecological examination revealed a papillary tumor at the posterior wall of the vagina, 4 cm from the vaginal fornix. Biopsy showed adenocarcinoma similar to the rectal lesion. Rectal cancer with direct invasion to the uterus and an isolated vaginal metastasis were diagnosed. We discussed the treatment strategy with gynecologist, medical oncologist and radiologist. Total vaginectomy or total pelvic exenteration, which is high invasive and high morbidity, would not reduce a risk of distant metastasis and not improve prognosis of this patient. So, we had plan of transvaginal tumor resection if direct tumor invasion to uterus and vagina would be denied at operation.

At surgical operation, low anterior resection with covering ileostomy and hysterectomy were performed. We then examined the vaginal tumor, which was 16 mm in size, 3 cm from the vaginal edge. The posterior wall of the vagina could be separated from the rectum surgically. No direct invasion from the rectum to the vagina was identified. No cancer dissemination was detected in the pelvis or peritoneum. Transvaginal tumor resection was performed. The postoperative course was uneventful and she was discharged on the 24th postoperative day. She took times to master ileostomy care, so stayed in hospital longer than usual cases. Pathological examination of the resected rectum showed a well-differentiated and mucinous adenocarcinoma with a tumor in the Pouch of Douglas (T4a), lymphatic channel invasion (Ly1), severe venous channel invasion (v3), and lymph node metastases (N1a). No direct invasion to the uterus was observed. The vaginal tumor showed well-differentiated adenocarcinoma similar to the rectal lesion (Fig. 2). Thus, rectal cancer with lymph node metastasis and an isolated vaginal metastasis was diagnosed. The patient did not want to receive adjuvant chemotherapy. Nineteen months after resection, multiple lung metastases and recurrent tumor in the pelvic cavity was detected on CT scan. The patient refused chemotherapy and has received palliative care. She is alive three months after the identification of the recurrent tumor.

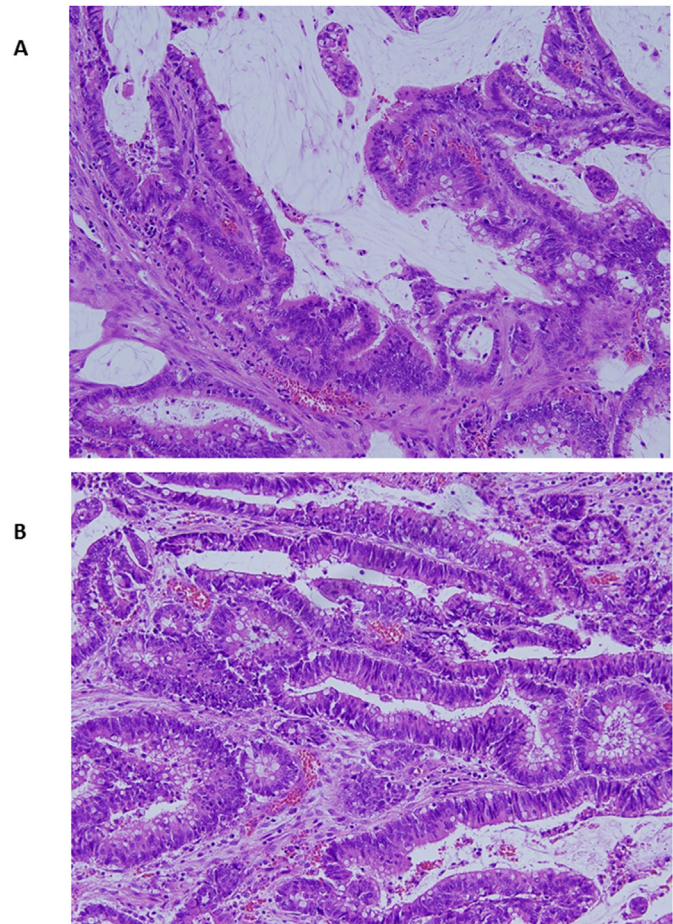


Fig. 2. Pathological findings of resected rectum (A) and vaginal tumor (B). (HE staining $\times 20$). The vaginal tumor reveals well-differentiated adenocarcinoma, similar to the rectal lesion.

3. Discussion

Primary vaginal carcinoma accounts for only 1% of all gynecologic malignancies [1]. Most cases of primary vaginal carcinoma are



Fig. 1. T1-weighted oblique coronal MRI image demonstrates a tumor in the rectum with suspected invasion to the uterus (arrow). T2-weighted sagittal MRI image reveals a papillary hyperintense tumor (arrowhead).

Table 1
Cases of isolated vaginal metastasis from colorectal cancer.

Author	Year	Age	Complaint	Primary tumor location	Time interval	Location	Treatment	Outcome
Raider	1966	63	Bleeding	Descending colon	2 years after primary operation	Introitus left	Vaginal resection, nitrogen mustard → radiation therapy	Alive for 4 years after vaginal recurrence
Lee SM	1974	81	Not mentioned	Sigmoid colon	Synchronous	Anterior wall	Vaginal tumor excision	Alive for 12 months after diagnosis
		57	Not mentioned	Sigmoid colon	18 months after primary operation	Introitus	Radiation therapy	Vaginal recurrence a year after diagnosis
Marchal F	2006	81	Bleeding	Sigmoid colon	Synchronous	Lower third of vaginal wall	Vaginal tumor excision, external beam therapy of peritoneal area, brachytherapy	Alive for 39 months after diagnosis
Costa SRP	2009	67	Bleeding and pain	Right colon	3 months after primary operation	Anterolateral face left	Vaginal tumor excision, radiotherapy	Alive for 4 years after vaginal recurrence
Funada T	2010	63	Perineal discomfort	Rectum	Synchronous	Vaginal orifice	Partial vaginal resection, radiotherapy	Alive for 1 year after diagnosis
Sabbagh C	2011	62	Bleeding	Rectum	Synchronous	Posterior wall	Vaginal tumor excision, adjuvant chemotherapy (FOLFIRI)	Alive for 1 year after diagnosis
		78	None	Rectum	Synchronous	Anterior wall	Radiochemotherapy for rectal lesion → Vaginal tumor excision → adjuvant chemotherapy and radiotherapy for the vagina	Alive for 10 months after surgery
D'Arco F Present case	2014	67	Bleeding	Sigmoid colon	Synchronous	Anterior wall	Vaginal tumor excision	Not mentioned
		71	None	Rectum	Synchronous	Posterior wall	Vaginal tumor excision	Lung metastasis and pelvic cavity recurrence nineteen months after diagnosis

squamous cell carcinoma. Other histologic types, such as adenocarcinoma, are extremely uncommon. When a vaginal tumor is shown to be adenocarcinoma pathologically, we must consider the possibility that the lesion is a metastasis. The primary tumor associated with metastatic vaginal adenocarcinoma is most commonly the uterus, and very rarely from the colon, rectum, kidney, breast, or pancreas [2].

Mechanisms leading to the formation of vaginal metastases are thought to involve the lymphovascular pathways, direct infiltration through the Pouch of Douglas, and pathways via the fallopian tubes [3]. In the present patient, the rectal tumor had extramural extension with lymph node metastases. A pathway of infiltration via the fallopian tubes or lymphovascular pathways was suspected.

Ng reviewed case reports of vaginal metastases from colorectal cancer from 1956 to 2012 [2]. Most lesions were not isolated, but were synchronous with metastases to other organs such as liver, lung, or bone. Only nine cases of isolated vaginal metastases were previously reported in the English literature (Table 1) [4–10]. The present patient is the tenth with an isolated vaginal metastasis from colorectal cancer. In nine of the ten patients, the primary site of the colorectal carcinoma was the left colon/rectum (three in the sigmoid, four in the rectum, and one in the descending colon). Two patients, including the present patient, showed recurrence after treatment of the isolated vaginal metastasis.

Clinical presentations of tumors metastatic to the vagina include vaginal bleeding, vaginal mass, vaginal discharge, vaginal staining, and perineal discomfort [2]. Most patients present with some symptoms from the metastatic vaginal tumor. Asymptomatic metastatic vaginal tumors from colorectal cancer are very rare [2]. MRI evaluation is very useful to detect a vaginal lesion and to distinguish adenocarcinoma from squamous cell carcinoma [10]. Adenocarcinomas usually have a T2w hyperintense signal, whereas squamous cell carcinomas appear with T2w intermediate and T1w (T1-weighted) hypointense signals on MRI.

A combination of surgical resection and radiotherapy was used to treat five patients in the literature. Adjuvant chemotherapy after

surgical resection was given to two patients. Recent advances in the chemotherapy used to treat colorectal cancer may contribute to a better prognosis.

4. Conclusion

Vaginal metastasis from colorectal cancer is a very rare entity. We should keep the vagina within the field of view of pelvic MRI in colorectal cancer patients. If female patients show gynecological symptoms, gynecological examination should be recommended. Isolated vaginal metastases are an indication for surgical resection, and adjuvant chemotherapy is also recommended.

Ethical approval

This is a case report. The patient was informed that the data concerning her case would be submitted for publication.

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Author contribution

Ai Sadatomo is corresponding author, analyzed and collected data, drafted of the article.

Dr. Koinuma revised the article.

Dr. Lefor confirmed the English language manuscript.

Dr Horie and Dr Sata approved of the article.

Conflict of interest statement

No conflict of interest.

Consent

The patient provided informed written consent prior to submit the manuscript.

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