CASE REPORT

Small bowel metastasis of uterine cervical adenocarcinoma

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SUMMARY

A few cases of small bowel metastasis from uterine cervical cancer have been previously reported. All reported cases were connected to squamous cell carcinoma, while none were associated with cervical adenocarcinoma. This report is of a rare case of cervical adenocarcinoma that haematogenously metastasised to the small intestine, and which caused a perforation and small bowel obstruction metachronously. An 84-year-old woman was admitted to our hospital with vaginal bleeding. She was diagnosed with FIGO stage III cervical adenocarcinoma by imaging and pathohistological examinations. Three months after receiving radiation therapy to control the bleeding, surgery was performed twice; the first operation for small bowel perforation and the second for small bowel obstruction. She was then diagnosed with haematogenous metastasis of cervical adenocarcinoma to the ileum according to the operative, histopathological and immunopathological findings.

BACKGROUND

Small bowel metastasis from uterine cervical adenocarcinoma has not been reported yet.

CASE PRESENTATION

An 84-year-old woman was admitted to our hospital for massive vaginal bleeding. A mass was palpated in the cervix. CT and MRI showed that the cervical mass was 6×6×6 cm and the serosa of the bladder and rectum were suspected to be involved, not the mucosa of these (figure 1). The surrounding and para-aortic lymph nodes were swollen. Biopsy from the mass revealed poorly differentiated adenocarcinoma, endocervical type (figure 2). She was diagnosed with cervical adenocarcinoma, FIGO stage IB. Radiation therapy was undertaken to control bleeding.

Three months after her discharge, she presented to our emergency room with a 2-day history of epigastric pain.

INVESTIGATIONS

CT revealed free intraperitoneal air.

DIFFERENTIAL DIAGNOSIS

- Gastrointestinal (GI) tract perforation due to cancer invasion or radiation therapy.
- Uterine perforation due to cervical adenocarcinoma.

TREATMENT

GI tract perforation due to cancer invasion or radiation therapy was suspected, and an urgent

Figure 1 A sagittal image of magnetic resonance showed 6×6 cm mass in the cervix that involved the bladder and the rectum.

exploratory laparotomy was performed. A 5 cm length of the ileum, 60 cm oral to the terminal ileum, was thickened and appeared necrotic. There were no other abdominal findings including intraperitoneal dissemination or invasion of cancer. The necrotic part of the ileum was suspected as the perforation site and was resected (figure 3). Functional end-to-end anastomosis was performed. The histopathological examination of the resected specimen confirmed the diagnosis of adenocarcinoma that resembled the cervical adenocarcinoma (figure 3).

Figure 2 Microscopic findings of the cervical mass showed poorly differentiated adenocarcinoma, endocervical type (H&E stain, ×100). Immunohistochemical stain of the specimen showed AE1/AE3(+), CEA(+), p53(+) and chromograninA(–).

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Figure 3 (A) Macroscopic findings of the resected specimen (the first operation) showed that the ileal wall was thickened. The mucosa was reddish but not actually necrotic. However, the mucosa was partially defected. That lesion suggested a perforated site (arrow). (B) Microscopic findings revealed adenocarcinoma mainly in submucosa and partially in subserosa (H&E stain, $\times 2$). (C) Poorly differentiated adenocarcinoma that resembled the cervical adenocarcinoma was found in submucosa (H&E stain, $\times 100$).

The poorly differentiated cancer cells were mainly found in the submucosa and infiltrated into the subserosa of the ileum with little involvement of the mucosa or serosa. The surrounding lymphatic and venous vessels were diffusely invaded. The results of immunopathological examination corresponded to the cervical adenocarcinoma as the finding of CK7(+), CK20(–), and CEA(+) were obtained. She was diagnosed with haematogenous ileal metastasis from cervical adenocarcinoma.

Although she was discharged from hospital after her recovery, she returned to our hospital with abdominal pain 40 days after her discharge. Small bowel obstruction (SBO) was suspected on CT and a long intestinal tube was placed for decompression. However, her symptom and image findings did not improve and a laparotomy was performed on the 14th day. A 10 cm long wall-thickened and whitened ileum was found 10 cm oral to the previous anastomotic site. The lesion was suspected as a cause of the SBO and was resected (figure 4). Furthermore, there were many white nodules in the peritoneal cavity and dissemination was suspected. The histopathological findings of the surgical specimen revealed adenocarcinoma similar to the cervical cancer and the previous resected ileal cancer (figure 4).

The cancer cells were found mainly in the submucosa as well as the subserosa, and partly in serosa. However, immunopathological examination was not performed; it was diagnosed as haematogenous as well as peritoneal disseminated ileal metastasis from clinical and pathological findings.

OUTCOME AND FOLLOW-UP

The patient died 4 months after the second surgery.

DISCUSSION

Metastatic small bowel cancer, either haematogenous or disseminated metastasis, from an extra-GI tract is more common than clinically thought.^{1–2} In autopsy studies, the incidence rate of metastatic small bowel cancer was reported to be around 5–10% of all malignancies with varying rates among different origins. The reported rate of the small bowel metastasis from cervical cancer in autopsy studies is 8.9%.^{1–2} In spite of such a high metastasis rate, only a few cases of small bowel metastasis from uterine cervical cancer have been previously reported.^{3–5} That might be because only a few cases present manifestations, or patients die before metastasis is clinically found.

Small bowel metastasis can cause obstruction, perforation, intussusception, malabsorption or bleeding and may be found as these causes in surgery. On the other hand, the symptoms of metastasis to the small bowel are sometimes non-specific. The suspicion of small bowel metastasis is always required in patients with a history of any cancer and manifestations. In our case, the metastasis lesions were found as causes of perforation as well as obstruction metachronously.

The majority of uterine cervical cancer is SCC.⁶ Adenocarcinoma account for about 20% of all cervical cancer and have increased in its ratio over the past decades. The major sites of metastasis from cervix are lung, liver and bone.⁷ So far, only a few cases of ileal metastasis from cervical cancer, and those are all SCC, have been reported. There have been no cases of cervical adenocarcinoma that have metastasised haematogenously to the small bowel.

In haematogenous metastasis, cancer cells are usually found in submucosa and merely in mucosa. That is, because the submucosa is loose connective tissue with abundant vessels and, once metastasis occurs, metastatic lesions expand in submucosa or expand to deeper layers. When metastatic lesions expand toward the lumen, they would cause obstruction or intussusception. In the present case, the microscopic features of the first resected specimen corresponded to the haematogenous pattern, and that of the second resected specimen, haematogenous as well as disseminated pattern. Peritoneal dissemination that was found in the second operation could occur because of the perforation of the metastatic site.

Several hypotheses of the mechanisms of perforation caused by secondary small bowel malignancies have been suggested.

Figure 4 (A) Operating findings. A part of the ileal wall was whitened and thickening (arrows). Oral side of the ileum was oedematous because of the ileal obstruction (arrow heads). Microscopic findings revealed adenocarcinoma in submucosa as well as subserosa (H&E stain, $\times 2$) (B) and poorly differentiated adenocarcinoma that was found in submucosa (H&E stain, $\times 100$) (C).

Leidich *et al*⁸ reported mural replacement by cancer cells cause necrosis of the small bowel. Kaneda *et al*⁹ suggested other mechanisms: ischaemia of the intestine due to tumour embolisation, increased intraluminal pressure due to intestinal obstruction and necrosis due to chemotherapy. Other causes include steroid use, trauma or radiation. In our case, microscopic findings suggested the cause of perforation was replacement by cancer cells or embolisation of vessels by cancer cells.

This report presents a rare case of ileal metastasis of cervical adenocarcinoma that caused perforation and obstruction metachronously. Clinicians should be aware that all malignancies could cause GI tract metastasis.

Learning points

- Authors experienced a rare case of small bowel metastasis from cervical adenocarcinoma.
- Doctors have to recognise that all cancer has a potential of metastasis to the small bowel.
- Metastatic cancer also cause obstruction, perforation, intussusception, malabsorption or bleeding.

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Contributors TS and MA were clinically responsible for this case. We reviewed clinical course of this case retrospectively with advices from MM and NK.

Competing interests None.

Patient consent Obtained.

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