



# Cervical cancer invading the uterine corpus and sigmoid colon: A case report

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## ABSTRACT

Early-stage cervical cancer rarely extends to the uterine corpus and invades the serosal layer. Here, we present a case of cervical cancer extending to the uterine corpus and then penetrating the myometrium to invade the sigmoid colon. Transabdominal type C2 radical hysterectomy, bilateral salpingo-oophorectomy, pelvic lymphadenectomy, and sigmoid resection were performed. The patient then underwent chemotherapy as she was unable to tolerate chemoradiotherapy. She recovered well and was followed up for 14 months. Our report reveals that the uterine corpus can be a route of tumor metastasis in cervical cancer.

## 1. Introduction

Cervical cancer remains the fourth most common cancer in women, with an estimated 604,000 new cases and 342,000 deaths reported globally in 2020 [1]. The progression of cervical cancer generally follows the sequence: occurrence in the cervix, downward invasion to the vagina, invasion to the parametria, and invasion forward to the bladder or backward to the rectum. However, it rarely invades the uterine corpus. Here, we describe the case of a 65-year-old woman who presented with cervical cancer extending to the uterine corpus and then penetrating the myometrium to invade the sigmoid colon.

## 2. Case Presentation

A 65-year-old woman presented to the department of gynecologic oncology with a 10-year history of menopause and vaginal bleeding that had been persisting for 2 months. Physical examination revealed an ulcerative tumor (5 cm × 3 cm) in the cervix and a tumor invading the posterior vaginal fornix. The left and right parametria and sacral ligaments did not show thickening or shortening. There were high levels of squamous cell carcinoma antigen (19.61 ng/mL), carbohydrate antigen (CA)-153 (26.3 U/mL), carcinoembryonic antigen (CEA) (28.28 ng/mL), and neuron-specific enolase (NSE) (18.49 µg/L), while CA-199 and alpha-fetoprotein levels were normal (4.77 U/mL and 3.20 ng/mL, respectively). Color Doppler ultrasound revealed a 16 mm × 9 mm low-echo area in the anterior lip of the cervix and punctate blood flow signals

(Fig. 1A). The thickness of the endometrium was 7 mm (Fig. 1B). Magnetic resonance imaging revealed a 4.3 cm × 4.0 cm × 3.7 cm slightly high-signal shadow on a T2-weighted image and low-signal shadow on a T1-weighted image of the cervix (Fig. 2A). The lesion reached the serosa of the cervix, and the bladder and rectal walls were not thickened. The tumor invaded the left wall of the uterine corpus and locally reached the serosa (Fig. 2B). Several enlarged lymph nodes, without obvious enhancement, were found near the bilateral iliac vessels, measuring a maximum of approximately 1.9 cm × 1.1 cm. Preoperative cervical biopsy revealed high-grade squamous intraepithelial lesions and focal infiltration (depth of approximately 1 mm). The preoperative clinical diagnosis was stage IIA2 cervical cancer.

Intraoperatively, it was found that the left uterine fundus tightly adhered to the sigmoid colon. Furthermore, the tumor penetrated the left uterine fundus and invaded the serosa of the sigmoid colon (Fig. 3). Hence, transabdominal type C2 radical hysterectomy, bilateral salpingo-oophorectomy, pelvic lymphadenectomy, and sigmoid resection were performed. Postoperative pathology revealed that moderately differentiated squamous cell carcinoma of the cervix invaded the whole cervical layer, extended upward, and penetrated the entire myometrial wall of the fundus uteri. Lymphovascular space invasion was observed in the cervix. Tumor cells were found in the right parametria and the sacral ligament. The left parametria, sacral ligament, and resection margin of the vagina were negative. Forty lymph nodes were examined during surgery. One right internal iliac lymph node was positive, and others were negative. Furthermore, the tumor invaded the sigmoid colon from

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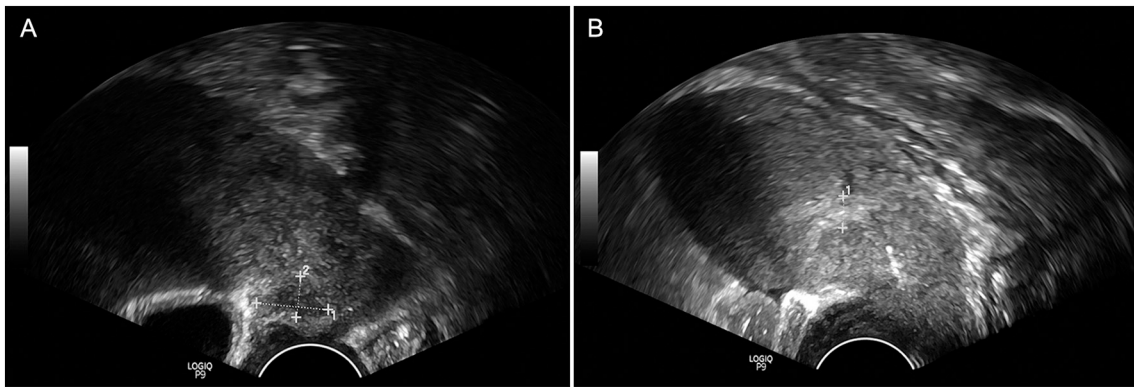


Fig. 1. Color Doppler ultrasound of (A) the cervical tumor and (B) the uterine cavity.

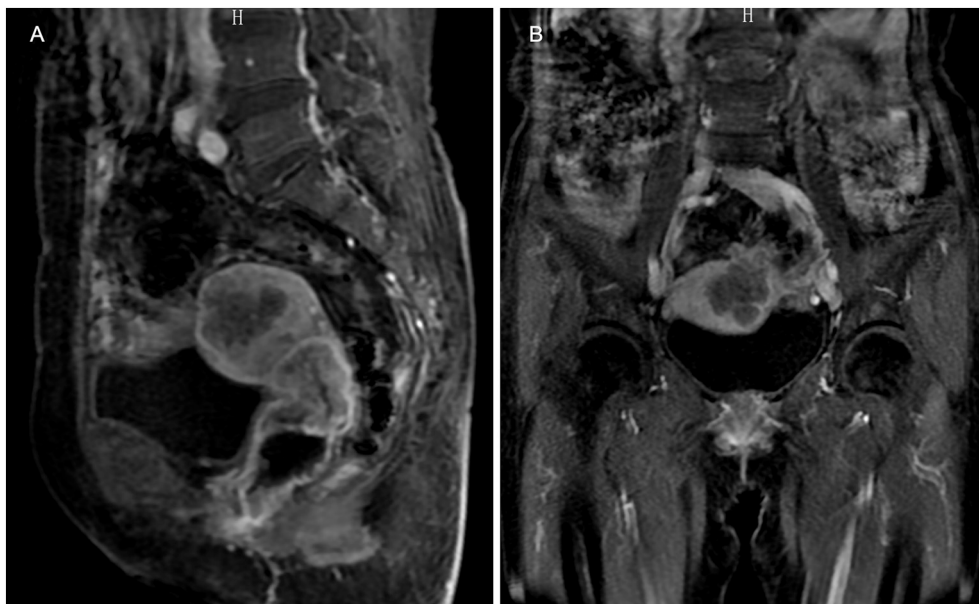


Fig. 2. Magnetic resonance imaging for cervical cancer based on T1-weighted fast spin-echo sequence: (A) cervical tumor, (B) uterine corpus invasion.

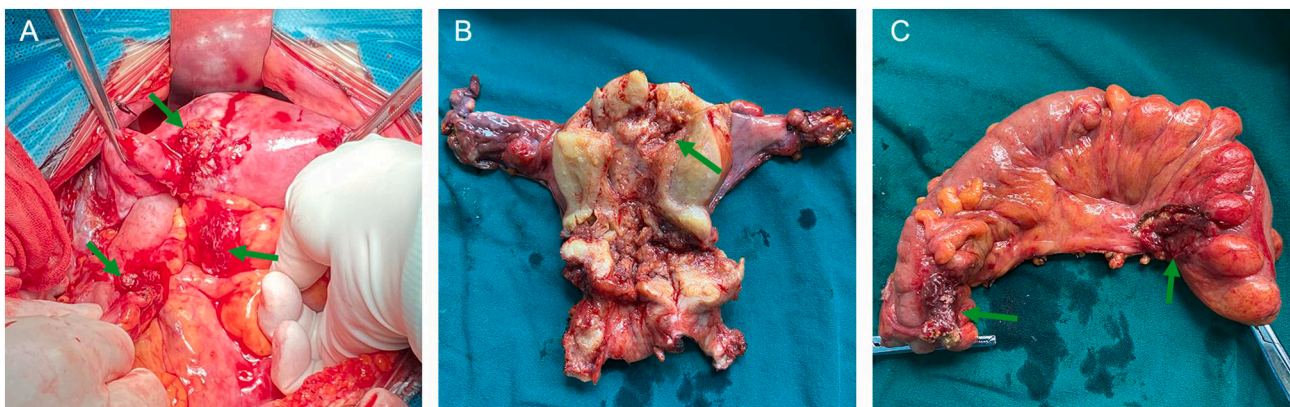
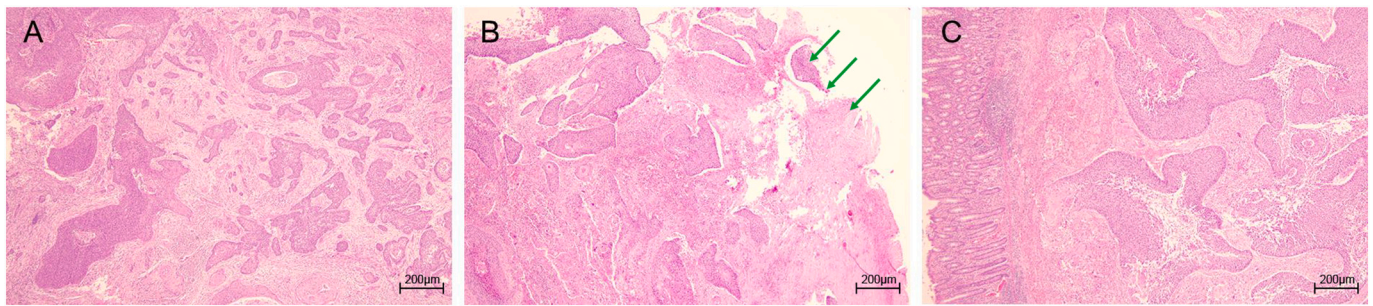


Fig. 3. Intraoperative findings. (A) The left uterine fundus was penetrated by the tumor and tightly adhered to the sigmoid colon, (B) resected uterus, (C) resected part of the sigmoid colon. Green arrows indicate the tumor focus. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

the serosa to the submucosa, and the resection margin on both sides was negative (Fig. 4).

Concurrent chemoradiotherapy with external pelvic irradiation and

cisplatin was administered postoperatively. However, after the first course of concurrent chemotherapy with cisplatin, the patient experienced severe dizziness, nausea, and vomiting, and refused to continue



**Fig. 4.** Postoperative pathology of (A) a cervical squamous cell carcinoma, (B) whole myometrial wall invasion of the fundus uteri (green arrow indicates the tumor-penetrated serosal layer of the fundus uteri), and (C) sigmoid colon involvement. (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

concurrent chemoradiotherapy. Adjuvant chemotherapy with three courses of docetaxel and carboplatin was administered. Positron emission tomography–computed tomography revealed no metastasis. The patient recovered well and was followed up for 14 months.

### 3. Discussion

A large retrospective cohort study revealed that the rate of uterine corpus invasion (UCI) is 4.9% in cervical cancer [2]. Our recent study demonstrated that UCI was likely to be a missed diagnosis (10.5%) [3]. However, to the best of our knowledge, this is the first report of early-stage cervical cancer extending to the uterine corpus and then penetrating the myometrium to invade the sigmoid colon. This special case demonstrates a new route for tumor metastasis in cervical cancer.

UCI is disregarded by the FIGO staging system, possibly because it is difficult to detect preoperatively. Furthermore, treatment strategies, including radical surgery and concurrent chemoradiotherapy, are not altered by the presence of UCI. However, the FIGO staging system considers only the anatomical compartment spread of cervical tumors, and UCI, especially with myometrial invasion  $\geq 50\%$ , reflects aggressive tumor behavior and is associated with decreased survival in patients with cervical cancer [4]. Here, we present a case where the patient was preoperatively classified as having stage IIA2 cervical cancer, without considering UCI. However, surgical–pathological staging revealed it to be stage IVB because of sigmoid colon involvement. Thus, UCI is closely related to the prognostic and staging system. It is worth considering whether UCI should be included in FIGO staging, especially since the staging is being revised to incorporate imaging and pathological findings [5,6].

The patient chose surgery instead of chemoradiotherapy owing to the adverse events associated with the latter. In this case, tumor extension to the uterine corpus and sigmoid colon could not be treated with radical chemoradiotherapy because it was not accurately diagnosed preoperatively. However, in cases of intraoperatively diagnosed tumors locally invading the sigmoid colon, surgery is expected to completely eradicate the tumor. In the present case, no tumor recurrence was observed after 14 months of follow-up.

### 4. Conclusion

UCI is possible type of tumor metastasis in cervical cancer that may need to be considered in FIGO cervical cancer staging. When early-stage cervical cancer (IB1–IIA2) extends to the uterine corpus and possibly penetrates the entire myometrium, surgery is a better strategy for definite diagnosis and can be expected to contribute to radical treatment.

### Contributors

Shimin Huang drafted the manuscript and interpreted the data.

Fangjie He was involved in patient care, participated in the conception of the case report, and acquired and interpreted the data.

Both authors approved the final submitted version.

Both authors approved the final submitted version.

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### Patient consent

Written and verbal consent was obtained from the patient as well as ethical approval from the hospital Institutional Review Board (L2021-17) for publication of the case report.

### Provenance and peer review

This article was not commissioned and was peer reviewed.

### Declaration of Competing Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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