

A case of isolated peritoneal metastasis in clinically early stage squamous cell carcinoma of the uterine cervix

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Cervix cancer had been the most common gynecologic cancer for decades. Although early diagnosis and treatment have been developed, cervix cancer is the fourth leading cause of cancer death in women worldwide. Unlike other gynecologic cancers, cervical cancer is defined and classified by a clinical staging system. Because this system is based on the spreading pathway in which cancer cell prefers to spread directly to adjacent organs, it is very rare to see distant metastasis of early stage cervical cancer. Herein, we report a case with clinically early stage squamous cell carcinoma of uterine cervix, which showed isolated peritoneal metastasis, and review the relevant literature.

Key words: Squamous cell carcinoma; Uterine cervical cancer; Peritoneal metastasis

Introduction

Cervical cancer had been the most common gynecologic malignancy for past decades. Cervical cancer is the third most commonly diagnosed cancer and the fourth leading cause of cancer death in women worldwide.¹ The stage of cervical cancer is determined by a clinical staging system built up by the International Federation of Gynecology and Obstetrics (FIGO), unlike other gynecologic cancers. Even though many physicians use various advanced imaging modalities simultaneously, the clinical staging system has often limits in accuracy. Thus, the needs for surgical staging has been raised and considered for years. Revising the FIGO

system for more accurate diagnosis of cervical cancer and better staging system with proper treatment, issues concerned with surgical staging have been upon the background worldwide.

Metastasis of cervical cancer occurs by local extension and lymphatic dissemination. When distant and hematogenous metastases occur, the common sites are liver, lung, bone and so on.² Few cases of cervical cancers diagnosed as early stage were reported with metastasis to other intra-peritoneal organs such as ovary.^{3,4} Apart from the rareness, most of the metastases occur in cases of adenocarcinoma of the uterine cervix. Considering the progression pattern of cervical cancer, locally limited early stage carcinoma of the uterine cervix with distant metastasis is rare. Accordingly, there are very few reports regarding the optimal management and prognosis of these patients.

Herein, we report a case of stage IB1 squamous cell carcinoma (SCC) of the uterine cervix with isolated peritoneal metastasis and positive peritoneal washing cytology, which has been found to have differences between the preoperative imaging study and pathologic findings.

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Case Report

A 43-year-old woman visited our institution in March, 2010, and she showed high grade squamous intraepithelial lesion of the uterine cervix on Pap smear. She experienced postcoital bleeding for 2 months before the visit. Her obstetrical history was remarkable for two uncomplicated

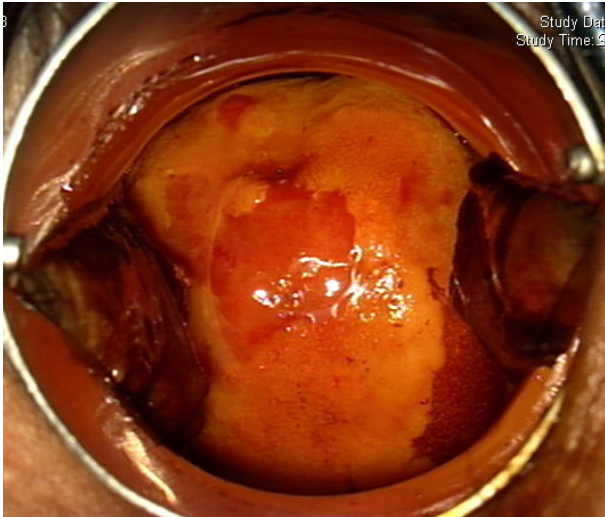


Fig. 1. Colposcopic findings. Irregular margin, snow white color, and indistinct acetowhite epithelium suggesting cervical intraepithelial neoplasia III was noted.

Induced, and the other for uncomplicated cesarean section at term. There were multiple erosions with irregular margin, which was suspected of cervical intraepithelial neoplasia (CIN) III on the colposcopic examination (Fig. 1). Cervical biopsy was performed and the result was SCC in situ. Human papillomavirus (HPV) 16 was positive by HPV genotyping. The pathology of loop electrosurgical excision procedure (LEEP) showed SCC in situ with positive endocervical margin and CIN II at exocervical margin. Magnetic resonance imaging of pelvis was also performed to identify the possible hidden invasive cancer lesion on the endocervix and a 2×1.2 cm - sized mass in the endocervical canal was identified, which was suspected of cervical cancer with parametrial invasion (Fig. 2). No other enlarged lymph nodes were noted. Although the patient was diagnosed as SCC in situ of the uterine cervix on the LEEP, we could not exclude an invasive endocervical cancer. Therefore laparoscopic radical hysterectomy was planned using two-port access system.⁵ Entering the pelvic cavity, a 1×1 cm - sized lesion which could be suspected as a cancerous seeding was noted on the posterior uterine cervical serosa (Fig. 3) and the frozen biopsy showed SCC. Additionally, peritoneal washing cytology and posterior peritonectomy were performed with laparoscopic radical hysterectomy, bilateral pelvic lymph node dissection, and paraaortic lymph node dissection. The final pathologic result demonstrated that there was residual

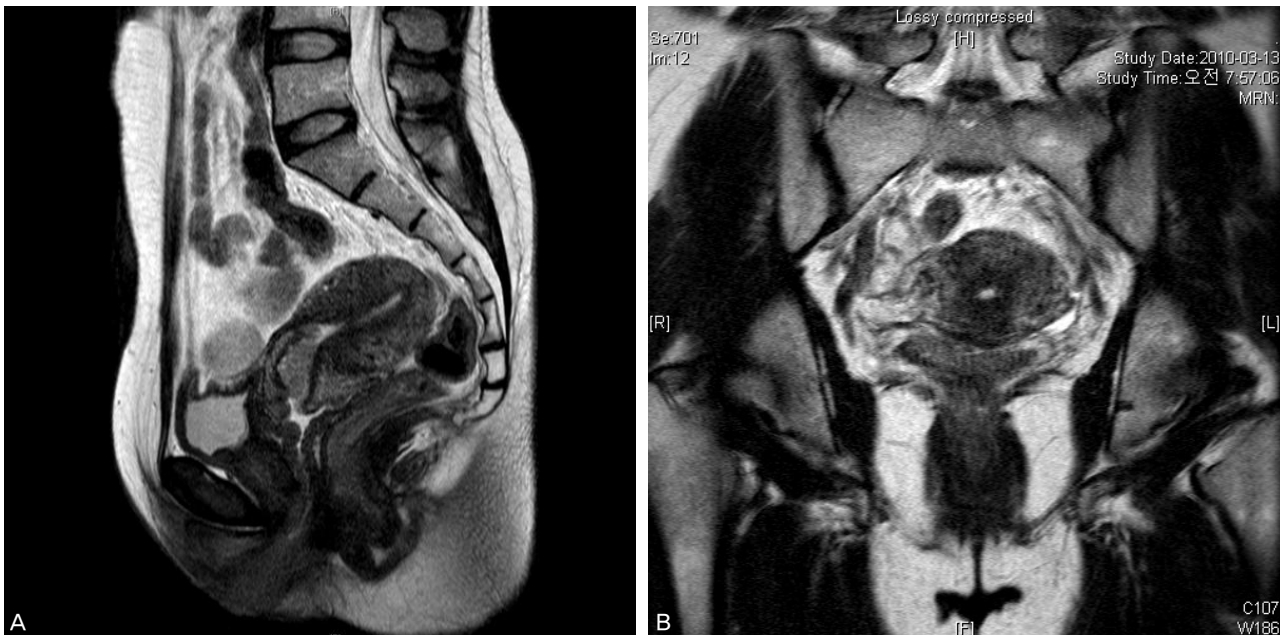


Fig. 2. Magnetic resonance imaging reveals a 2.2×1.2 cm mass in the endocervical canal with parametrial invasion. (A) Sagittal view, (B) Coronal view.

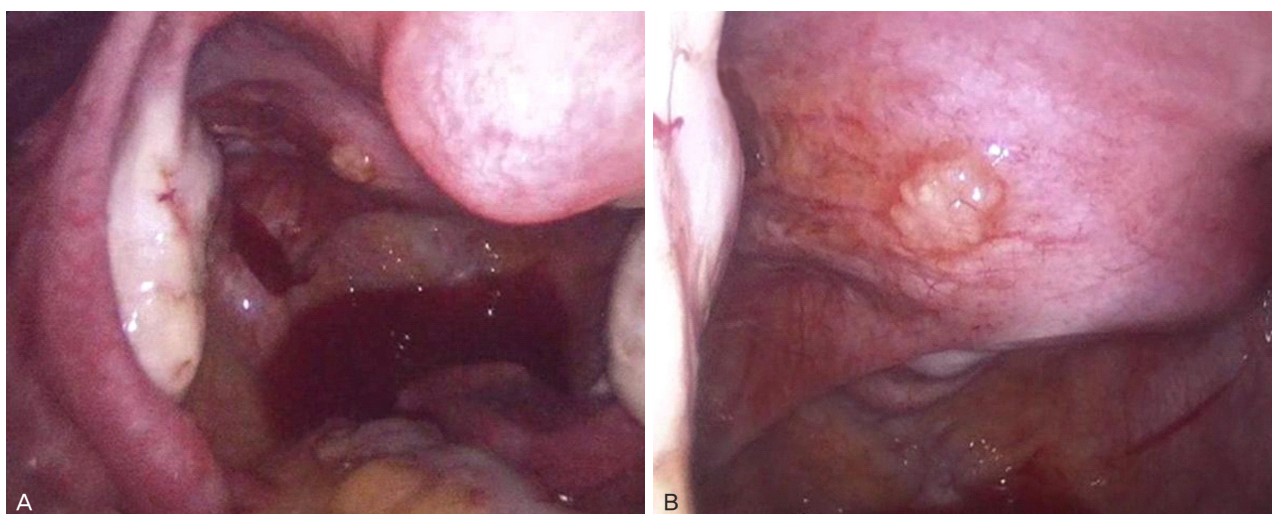


Fig. 3. Intraoperative finding. An implanted mass was noted on the serosa of the uterus.



Fig. 4. Gross finding after surgery. The arrow indicates the cancer lesion.

invasive SCC of the uterine cervix, with 28 mm in extent and 1.3 mm in maximal invasion depth, and positive lymphovascular space invasion (LVSI) (Fig. 4). SCC in situ extended to vaginal cuff was also noted. Peritoneal cytology revealed presence of atypical squamous cells, suggestive of SCC. All other specimens including lymph nodes, pelvic peritoneum, both ovaries, parametrium were negative from the carcinoma. After the operation, the blood of SCC antigen was 0.7 U/mL. The patient had gone through 6 cycles of paclitaxel-carboplatin combination chemotherapy. After the chemotherapy, she had extended pelvis radiotherapy & brachytherapy from September 7th, 2010 to November 19th,

2010. She has been cared as an outpatient without any other problems up to now.

Discussion

In this case, the final results of pathology showed a localized tumor at the uterine cervix, positive LVSI, positive peritoneal washing cytology, and an implantation at the posterior uterine serosa without involving the uterus. There was no parametrium and lymph node involvement. Different from the preoperative pathologic result, including cervical biopsy, she was diagnosed as stage IV cervical cancer, by surgical staging. This example could be regarded as not only a case which shows distant metastasis in clinically early cervical cancer, but also a case which shows gap between the clinical staging and the surgical staging.

Evaluation of peritoneal cytology during surgery for gynecologic cancer has been performed for years, because it was thought that it might be signifying subclinical intraperitoneal metastasis. Unlike ovarian or endometrial cancer, peritoneal washing cytology was not included in procedures for the operation of early stage cervical cancer. Since cervical cancer has been considered as a localized disease, it is reasonable that intraperitoneal metastasis is rarely suspected at clinically early stage. However, on the report by Zuna and Behrens⁶ cervical cancer patients who had positive peritoneal cytology, even though they were at clinically early stage, have shown poor prognoses. While the definition of LVSI has not been fully proved, this may account for the differences shown on the incidences of LVSI reported hereby

and its effect also on pelvic lymph node metastasis and survival.⁷ For the endometrial cancer, some authors reported the highest correlation with survival observed for LVSI, while pelvic lymph node metastasis was also significantly associated with LVSI.^{8,9} Additionally, for the cervical cancer, there are several reports that showed LVSI as a risk factor predicting survival.¹⁰⁻¹² Although new staging of cervix cancer, which was approved by Union internationale contre le cancer, American joint committee on cancer and FIGO, did not include the pathologic findings of LVSI and pelvic lymph node metastasis, they recommended to describe the points of these findings.

This report is for a rare case of clinically early stage cervical cancer with peritoneal implantation and also for an unusual case which showed differences between imaging studies and pathologic findings. Differences between the pre-operative clinical imaging study and the operative findings, as to high risk factors for negative prognosis such as positive LVSI, positive peritoneal cytology, and independent intraperitoneal implantation having no uterine invasion, make the stage of the case controversial. However, considering a single implantation at intraperitoneal surface without any direct invasion of adjacent organs, we decided to do the adjuvant treatments in proportion to stage IV.

In this respect, more attention should be paid to peritoneal cytology and other risk factors not only in the advanced stage but also in the early stage of cervical cancer. Although cervical cancer has been thought to be a localized disease, here we can see the possibility of distant metastasis from it. In addition, when we consider the value and possibilities of LVSI and pelvic lymph node metastasis, peritoneal cytology as risk factors for distant metastasis, proper recognition through further studies should be made and the revised clinical staging system with surgical pathologic result should be followed.

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