

Solitary splenic metastasis of squamous cell carcinoma of the uterine cervix: A case report and review of the literature

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Summary

A 45-year-old patient presented with complaints of vaginal bleeding and pelvic pain. Fractioned probe curettage was performed and reported as Stage IIa, grade 3, squamous cell carcinoma of the uterine cervix. The patient underwent radical hysterectomy type III, bilateral salpingo-oophorectomy, omentectomy, appendectomy, and pelvic para-aortic lymph node dissection according to our clinical protocol. Adjuvant radiation therapy was planned. A splenic mass of 8 cm in diameter was revealed on computed tomography at the end of the third year of the disease-free follow-up period. Fine needle aspiration biopsy was performed and reported as metastatic carcinoma correlated to the previous cervical cancer. Debulking surgery was performed. The patient died one year after the second surgical operation.

Spleen metastasis in patients with squamous cell carcinoma of the uterine cervix is exceedingly rare. Nonetheless we recommend screening of all intra-abdominal organs including the spleen as a rare metastatic site in follow-up examination protocols.

Key words: Squamous cell carcinoma; Cervix; Splenic metastasis.

Introduction

Cervical cancer is the second most frequent cancer which accounts for 15% of all malignancies in women. The median age of occurrence is 45-50 years.

The disease begins as a dysplastic process in the squamo-columnar junction. The average rate of development of invasive cancer is 10-20 years from the first evidence of dysplasia. The tumor then spreads by local invasion. Metastatic spread is via the lymphatics to the pelvic lymph nodes. Hematogenous dissemination is the least common metastatic pathway of cervical carcinoma. Blood-borne metastases to the lung, liver, bone, heart, skin and brain are generally seen in Stage IV tumors or when local growth has previously been irradiated [1-3].

Spleen metastasis of squamous cell carcinoma of the uterine cervix is rare, and since 1977 there have been only two cases reported in the medical literature [4, 5].

Case Report

A 45 year-old-woman was admitted to the gynecology department complaining of abnormal vaginal bleeding and pelvic pain in March 1998.

On physical examination a large friable mass more than 4 cm involving the entire cervix was noted. A Pap smear and fractioned probe curettage were performed during bimanual pelvic examination under general anesthesia. There was no vaginal involvement and the parametrial spaces were free. The clinical stage was thought to be II a according to FIGO staging parameters. The pathology reported the tumor as squamous cell carcinoma of the uterine cervix (Figure 1). Abdominopelvic CT and intravenous pyelography were planned prior to surgery, and

no metastasis was reported. The patient underwent radical hysterectomy type III, infracolic omentectomy, appendectomy, pelvic and paraaortic lymphadenectomy according to our clinical surgical protocol. The pathologic examination of surgical specimens has supported clinical staging prior to surgery. There was no involvement of other surgical materials and the tumor was confined to the uterine cervix. External pelvic radiotherapy (50 Gy) for five weeks was performed following the operation.

The patient was followed-up for three-month periods for two years and then six-month periods for one year. Pelvic examination, vaginal cuff smear, chest X-ray examination and routine blood chemistry examinations were done at all control visits. At the end of the three-year disease-free follow-up period, she suffered from abdominal fullness and pain in the left hypochondrial region. Abdominal ultrasonography and computed tomography revealed a splenic mass of 8 cm in diameter. Fine needle aspiration biopsy was performed and the pathologic report was metastatic carcinoma correlated to previous cervical cancer (Figure 2). Explorative laparotomy was performed but splenectomy or debulking surgery could not be done because of partial invasion to the hepatic artery and vein, stomach, left kidney and adrenal gland. Chemotherapy (cisplatin 75 mg/m² for one day plus 5 FU 625 mg/m² for three days; three cures in 21-day intervals) was performed. The patient died one year after the second surgery.

Discussion

Squamous cell carcinoma of the uterine cervix usually originates at the squamo-columnar junction. Regional lymphatic vessel or hematogenous spread may occur. Dissemination usually follows an orderly sequence, but occasionally it may metastasize to the pelvic lymph nodes, invade the bladder or rectum or produce distant metastasis. Involvement of the periaortic nodes without the pelvic nodes is usual [1]. Blood-borne metastases to the lung, liver, bone, heart, skin and brain are generally

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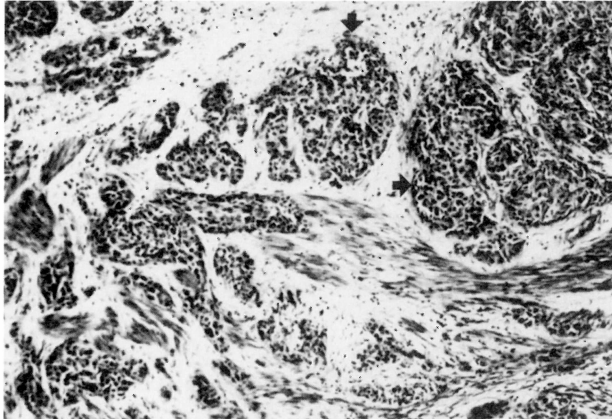


Figure 1. — Solid island of squamous cell carcinoma infiltrating cervical smooth muscle (H-E x 50).

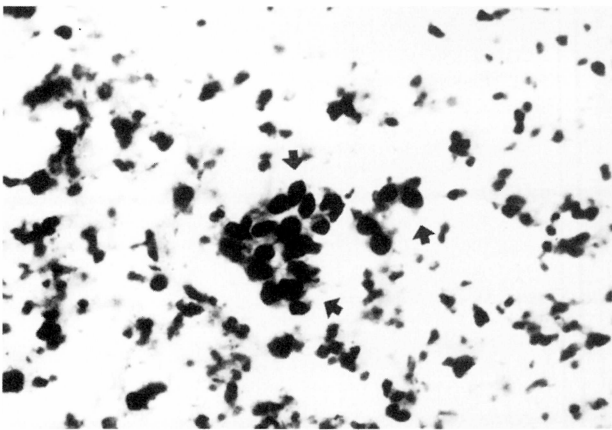


Figure 2. — A group of atypical epithelial cells in splenic aspirate (Pap x 400).

seen in Stage IV tumors or when the local growth has previously been irradiated [2].

The most common sites in cases of cervical carcinoma as single or multiple organ metastases are the lungs, bone and liver. The supraclavicular, paraaortic, inguinal, mediastinal, iliac, cervical and axillary regions are usually affected by lymph node metastasis [6, 7].

Splenic metastasis from various neoplasms is also very rare. Most splenic metastases are found at autopsy as a part of widespread disease [8-11]. Splenic metastasis of solid tumors particularly in the absence of disseminated disease is also exceedingly rare. In autopsy studies, splenic metastasis is found in approximately 7% of autopsied patients; breast cancer, lung cancer and skin are the most common sources. The incidence varies from 1.6% to 30% depending on the type of tumor. In virtually all of these instances, splenic involvement was accompanied by widespread metastasis [12-14].

As a part of the reticuloendothelial system, the spleen is the most common organ involved by hematopoietic malignancies [15]. In recent reports of solitary splenic metastasis, few gynecologic malignancies have been documented; i. e., four cases of endometrial cancer [4, 5, 16-18] four cases of ovarian cancer [19-22] and two cases of cervical cancer [4, 5, 23].

Several studies have been published detailing the distribution of tumor sites of squamous cell carcinoma of the cervix [6]. Most splenic metastases from cervical cancer only have been reported by Morgenstern and Rosenberg [18] as 4.7% in autopsy cases.

The first case of splenic metastasis of cervical cancer was documented by Brufman *et al.* in 1977 [4]. Klein *et al.* reported the second case in 1987 [5]. The case was Stage IIb squamous cell carcinoma of the cervix. They performed explorative laparotomy because of a huge mass in the upper left quadrant. The mass was adherent to the kidney, left diaphragm, pancreas and adrenal gland. Its pathological diagnosis was compatible with metastasis from cervical carcinoma.

According to our literature review this is the third case of squamous cell carcinoma of the uterine cervix leading to an isolated splenic metastasis to be reported. The current case was diagnosed at the first visit as having Stage IIa squamous cell carcinoma of the cervix, and then developed metastasis of the spleen 36 months after surgery and adjuvant radiation therapy. In this case and in other reported gynecologic tumors, the time of development of splenomegaly varied from 20-42 months (Table 1).

There are also few cases in the literature about isolated splenic metastasis in patients with ovarian cancer. The first case was reported by Morgenstern *et al.* in a woman with ovarian cancer and splenic metastasis [18]. Later Menigawa *et al.*, Max *et al.*, and Mostroianni *et al.* reported three separate cases [19-22].

Tumors of the endometrium, lung and skin are known sources of other solid organ tumors metastasizing to the spleen. Klein *et al.* also reported a case of endometrioid adenocarcinoma, Stage Ia and grade 2. The patient had a large mass that was not only adherent to the spleen but

Table 1. — Recurrent gynecological carcinomas with solitary splenic metastasis.

Source of cases	Age	Primary tumor site	Type of tumor	Time of recurrence
Brufman <i>et al.</i>	43	Uterine cervix	Squamous cell carcinoma	60 months
Klein <i>et al.</i>	28	Uterine cervix	Squamous cell carcinoma	20-24 months
Current case	45	Uterine cervix	Squamous cell carcinoma	36 months
Klein <i>et al.</i>	66	Endometrium	Endometrioid adenocarcinoma	20 months
Jorgensen <i>et al.</i>	59	Endometrium	Endometrioid adenocarcinoma	?
Arend <i>et al.</i>	?	Endometrium	Endometrioid adenocarcinoma	?
Gluliani <i>et al.</i>	58	Endometrium	Endometrioid adenocarcinoma	?
Morgenstern <i>et al.</i>	?	Ovary	Serous cystadenocarcinoma	60 months
Minegawa <i>et al.</i>	?	Ovary	Serous cystadenocarcinoma	?
Max <i>et al.</i>	55	Ovary	Serous cystadenocarcinoma	?
Mostroianni	?	Ovary	Serous cystadenocarcinoma	?
Campagnutta	47	Uterine cervix	Adenocarcinoma	60 months

also the kidney, left diaphragm, pancreas and left adrenal gland were affected. Jorgensen *et al.* and Arend *et al.* also reported a case of solitary metastatic involvement of the spleen with endometrial adenocarcinoma separately [5, 16-18].

There are also case reports of solitary splenic metastasis to various organs. The cases of these reports were clinical cases or reports of autopsy materials [23-26].

In conclusion, gynecological tumors and also other solid organ tumors uncommonly metastasize to the spleen. All abdominal organs including the spleen must be evaluated for metastasis during the follow-up period of cancer cases. To focus only on the primary tumor site in this follow-up period may cause late diagnosis of metastasis to other abdominal organs which results in poor prognoses for these patients.

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