

Endometrial and Ovarian Metastasis of Cervical Squamous Cell Carcinoma: A Rare Case Report and Literature Review

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Received: 16 Nov 2022

Accepted: 20 Dec 2022

Published: 28 Dec 2022

J Short Name: COO

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Citation:

Peng X. Endometrial and Ovarian Metastasis of Cervical Squamous Cell Carcinoma: A Rare Case Report and Literature Review. Clin Onco. 2022; 6(17): 1-3

Keywords:

Cervical Squamous Cell Carcinoma; Endometrial Metastasis; Ovarian Metastasis

1. Abstract

Cervical cancer is the most common malignant tumor in gynecology, and it is rare to spread directly to the endometrium. Clinically, cervical cancer metastasis to the ovary is rare, mainly adenocarcinoma, and ovarian metastasis of cervical squamous cell carcinoma is even rarer. At present, there are no clear guidelines for the diagnosis and treatment of endometrial and ovarian metastasis of cervical squamous cell carcinoma. In this paper, a case of cervical squamous cell carcinoma with uterine cavity and ovarian metastasis was reported, and the related literature was reviewed.

2. Introduction

Cervical cancer is one of the most common malignant tumors in women. Direct spread to the endometrium and hematogenous metastasis to the ovary are rare. There are few cases reported in the literature, and there is no guideline for the diagnosis and treatment of endometrial and ovarian metastasis of cervical squamous cell carcinoma. It should be differentiated from primary polycarcinoma in clinical practice [1-3]. Patients with metastatic polycarcinoma of cervical cancer often have a poor prognosis [3-4].

3. Case Presentation

A 69-year-old, gravida 3, parity 2, postmenopausal woman complained of abdominal pain for a year. However, because there was no discomfort symptoms such as vaginal bleeding, sexual bleeding, abdominal distension, and poor appetite, she did not pay attention to the doctor at first. The patient had a history of cystitis 2 years ago, and hematuria and frequent urination occurred again 1 month ago. Then she was treated in our hospital. Urinary ultra-

sound showed left hydronephrosis with left ureteral dilatation, and no obvious renal mass was found. However, a solid mass about 10cm in size was found in the pelvic cavity. The gynecologist found a cauliflower-like lesion with a diameter of 2cm on the posterior lip of the cervix, with contact palpation of blood, and no obvious abnormality in the parametrial. Transvaginal ultrasound and pelvic MRI showed an ill-defined mass of 5*5*4cm in the uterine cavity, a tumor of about 2*1.5cm was explored to the left of the posterior lip of the cervix, and there was a cystic-solid mass with irregular shape and ill-defined boundary in the pelvic cavity, about 10*10*8cm in size, with multiple thick and tortuous blood vessels. Multiple lymph nodes were shown bilaterally in the pelvic wall, mainly in the left pelvic cavity. The tumor markers SCC, CA125, CA199 and CEA were normal, but cervical biopsy showed squamous cell carcinoma. The patient was in an acceptable general condition, with only diabetes mellitus and good glycemic control. On November 02, 2022, an exploratory laparotomy was performed, and the left ureteral stent was implanted through ureteroscopy in the Department of urology before operation. During the operation, purulent fluid gush out after the left ureteral stent implantation. Pelvic exploration revealed that there was no obvious ascites in the pelvic and abdominal cavity. The left ovary was enlarged by about 10cm and was cystic and solid. There were no obvious abnormalities in the rest of the pelvic cavity. The cervix was enlarged, and a lesion measuring 2*1.5cm was found in the cervical canal, and a solid mass measuring 4cm in diameter was found in the uterine cavity with unclear borders and friable texture. Intraoperative frozen section indicated malignant tumor with

necrosis in the left adnexa, so we performed abdominal radical hysterectomy, bilateral adnexa resection, pelvic lymph node dissection, omentum resection, abdominal drainage, and left ureteral stent implantation under ureteroscopy.

4. Result

Postoperative pathological examination showed that left adnexa: malignant tumor with necrosis, the size of the mass was 12*11*7cm. Tumor was found in the fallopian tube. Immunohistochemical detection: CK (+), Vimentin (-), CK20 (+), CK7 (-), Desmin (-), SMA (-), CD56 (-), SALL4 (-), P63 (+), P40 (+), CK5/6 (-), CgA (-), Villin (-), P16 (+), LCK (+), HCK (+), PR (-), ER (-), Ki-67 (+, 80%), which were consistent with poorly differentiated squamous cell carcinoma and non-keratinizing squamous cell carcinoma. The size of the cervical tumor was 2*1.8cm. Tumor embolus could be seen in the blood vessel, and there was no nerve invasion. There was a mass in the uterine cavity, the size was 3.6*4.2*1.3, the microscopic examination showed a malignant tumor. The depth of infiltration was more than 1/2 muscle wall. Cancer was found in the periuterine, internal cervical and some left pelvic lymph nodes. The vaginal stump, greater omentum, right adnexa, and right pelvic lymph nodes were not involved by carcinoma. Combined with immunohistochemistry, the cervical and uterine tumors were classified as the same as the left adnexa, and the metastasis of cervical squamous cell carcinoma to the endometrium and ovary was considered. The patient recovered well after surgery and is receiving postoperative concurrent chemoradiotherapy [5]

5. Discussion

Cervical cancer is one of the most common gynecological malignancies. In 2018, there were more than 569 000 new cases of cervical cancer and more than 311 000 deaths worldwide [6]. In recent years, with the continuous maturity of early screening technology for cervical cancer and the strengthening of people's awareness of physical examination, the early diagnosis rate of cervical cancer has been greatly improved. However, there are still some patients who are not paid attention to, resulting in stage IIb-IVa at the time of initial diagnosis [7]. These people are mainly from rural areas and the elderly, which may be related to the relatively backward economic development and the fear of illness of the elderly.

The pathological types of cervical cancer include squamous cell carcinoma, adenocarcinoma, adenosquamous carcinoma and other rare types, among which squamous cell carcinoma is the most common, accounting for about 75-80%, but its prognosis is the best. The main routes of metastasis of cervical cancer are direct spread and lymphatic metastasis. Hematogenous metastasis can be seen in patients with advanced stage or poorly differentiated tumors, but it is rare. Among them, direct spread often involves the vaginal wall downward and rarely involves the uterine cavity upward. Ovarian metastasis from cervical cancer is rare, and ovarian metastasis from cervical squamous cell carcinoma is even rarer

[8-10]. Parametrial or corpus invasion, deep myometrial invasion, histological type and lymph node metastasis are high risk factors for ovarian metastasis of cervical cancer [11-12]. Toki et al. reported ovarian metastasis in one (0.19%) of 524 cases of squamous cell carcinoma and two (5.5%) of 36 cases of simple adenocarcinoma. Interestingly, all ovarian metastatic lesions were microscopic in size and found in the ovarian hilus [12], so we considered that hematogenous metastasis may be one of the main routes of ovarian cancer metastasis. The ovarian metastasis rate of cervical adenocarcinoma and adenosquamous cell carcinoma was significantly higher than that of squamous cell carcinoma, and the ovarian metastasis rate of advanced cervical cancer was significantly higher than that of early cervical cancer [8,10,12]. In this case, the coexistence of three routes of metastasis was considered: direct upward spread to the uterine cavity, hematogenous metastasis to the ovary, and lymph node metastasis.

Cervical cancer with ovarian metastasis, unilateral or bilateral ovarian metastasis can occur, but preoperative imaging or intraoperative exploration of ovarian size and morphology can not be significantly abnormal, need surgical pathological examination to confirm the diagnosis. Similarly, endometrial metastasis from cervical cancer can also occur without morphologic abnormalities. At the same time, endometrial and ovarian metastasis of cervical cancer should be differentiated from primary cervical, endometrial and ovarian cancers [1-3]. The diagnosis can be further confirmed by the comparison of the morphology and arrangement of tumor cells in the metastasis and cervical tumor cells, as well as by immunohistochemistry and molecular pathology. In addition, if the same HPV type is detected in cervical lesions and metastatic lesions, it is more clear that the primary lesion originates from the cervix [13]. In this case, the cervical, uterine cavity and ovarian tumors had the same morphology under the microscope, and the immunohistochemistry showed the same origin, which was consistent with the diagnosis of primary cervical squamous cell carcinoma. Because of the rare cases, there is no unified standard for the treatment of these patients, and the treatment plan is still selected according to the preoperative staging of cervical cancer. In addition to the resection of the independent primary tumors, extended resection is also required for the overlapping tissues or organs [1,4,14]. In this case, the patient was diagnosed with cervical squamous cell carcinoma before operation, which suggested that the uterine cavity and ovary space-occupying lesions before operation, but the benign and malignant and the source could not be confirmed. Intraoperative frozen section suggested that malignant tumor cells were found in the ovary. Therefore, we carried out the extended operation for the treatment of primary cervical and ovarian cancer, and also covered the scope of endometrial cancer. According to the NCCN guidelines, the treatment of cervical cancer is mainly divided into radical surgery and radiotherapy, supplemented by chemotherapy and comprehensive treatment.

The decision of treatment plan is mainly based on clinical stage, patient's age, general condition and medical level. Patients with high-risk factors such as unclear surgical margin, parametrial invasion, lymph node metastasis or intermediate-risk factors such as large tumor, deep stromal invasion, vascular space invasion need postoperative adjuvant radiotherapy. Studies have shown that concurrent chemoradiotherapy can improve the efficacy and reduce the risk of recurrence compared with radiotherapy alone. Concurrent chemoradiotherapy can improve the 5-year survival rate of patients with advanced cervical cancer by at least 6%, which may be related to the increased sensitivity of radiotherapy to tumor cells [15]. Although concurrent chemoradiotherapy has become the standard treatment for patients with advanced cervical cancer and has been widely recognized in clinical work, there are still some patients with poor treatment effect. Postoperative concurrent chemoradiotherapy was recommended for this patient.

6. Conclusion

Among the most common problems encountered in practice are the distinction of primary cervical, primary endometrial, and primary ovarian cancers, and the determination of tumor origin when there is synchronous, multifocal involvement of gynecologic tract sites, for example the endometrium and the ovary. However, accurate diagnosis in these cases is important because this has significant staging, management and prognostic implications [16]. If multiple primary malignant tumors are confined to the female pelvis, the prognosis is good, while patients with metastatic double or triple cancer of cervical cancer often have a poor prognosis [2-4]. After the diagnosis is confirmed, individualized treatment should be made to improve the prognosis of patients and long-term survival rate as much as possible. At the same time, it also warns the majority of women, especially elderly women, that they should pay attention to the importance of early screening and early intervention of cervical cancer. Only early detection can win more treatment opportunities and better prognosis.

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