

Uterine metastasis of invasive ductal breast carcinoma diagnosed by cytological examination in an asymptomatic patient: an unusual case report

Asemptomatik bir hastada invaziv duktal meme karsinomunun uterus metastazının sitolojik inceleme ile tanınması: Bir olgu sunumu

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Abstract

Uterine metastasis of malignant tumors occurs very rarely. Despite abnormal uterine bleeding is the most common symptom of metastatic uterine disease, less than 5% of patients may have not any gynecologic symptoms and diagnosis is made usually following abnormal cervical cytology. Here we present a case of uterine metastasis of invasive ductal breast carcinoma that was diagnosed by cervical cytological examination during breast cancer follow up. Even if there are not any gynecologic symptoms and findings in a patient who has breast cancer history, a detail systematic pelvic examination of these patients must be done yearly.

Key Words: **Breast cancer; Cervical cytology; Uterine metastasis.**

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Özet

Malign tümörlerin uterusu metastazları son derecede nadirdir. Uterusun metastatik tümörlerinde anormal uterin kanama en sık görülen semptom olmasına rağmen hastaların %5'inden azında herhangi bir jinekolojik semptom bulunmaz ve tanı çoğunlukla anormal servikal sitolojinin değerlendirilmesiyle konulur. Burada takipte olan meme kanserli bir hastada servikal sitolojik inceleme ile tespit edilen invaziv duktal meme karsinomunun uterusu metastazı sunulmuştur. Meme kanseri hikayesi olan bir hastada herhangi bir jinekolojik semptom ve bulgu olmasa bile bu hastaların detaylı bir sistemik pelvik muayenesi yıllık olarak yapılmalıdır.

Anahtar Sözcükler: **Meme kanseri; Servikal sitoloji; Uterin metastaz.**

Introduction

Metastases in the female genital tract from extragenital systems tumors are uncommon. These metastases are mostly originated from the primary breast or gastrointestinal system tumors (1). Despite it is more frequently seen in the ovaries, uterine metastasis of extrapelvic tumors occurs very rarely. If it occurs in the uterus, myometrium is more frequently involved than the endometrium (2). Breast cancer is the most frequent extragenital cancer that metastasizing to the uterus. Lobular histologic type of breast carcinoma is the most common type that metastasizes to the uterus than ductal histologic type (3).

Abnormal uterine bleeding is often the first sign of uterine metastasis. On the other hand, asymptomatic presentation of uterine metastasis is uncommon in the clinical follow-up. A metastatic breast carcinoma of uterus without any gynecological symptoms is presented. Cervical cytological examination facilitated to diagnosis and definitive diagnosis of metastatic breast carcinoma was made with endometrial sampling and immunohistochemistry staining of specimen with gross cystic disease fluid protein-15 (GCDFP-15), which is an important marker to confirm primary breast origin for metastatic tumors.

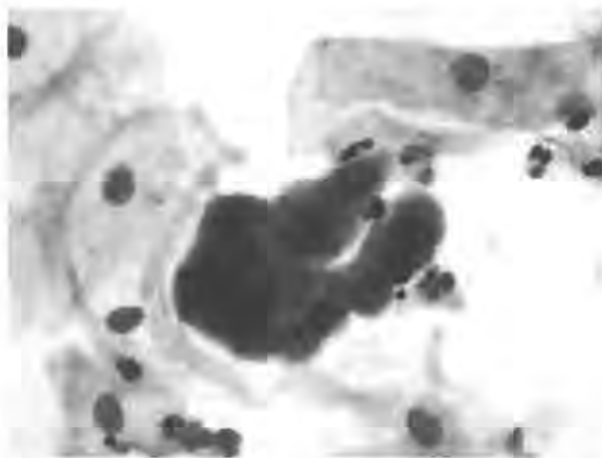
Case Report

A 58-year-old woman who had breast cancer history was consulted with our clinic for a routine gynecological examination during breast cancer follow-up. The patient had undergone a right modified radical mastectomy with axillary lymphadenectomy five months ago for invasive ductal breast carcinoma. Estrogen and progesterone receptors were also positive but c-erbB-2 oncogene was negative. Radiotherapy and chemotherapy consisted of taxotere-adriamycine- cyclophosphamide had administered six cycle to the patient. Before adjuvant hormonal therapy, gynecologic examination wanted from our department five months later from initial surgery.

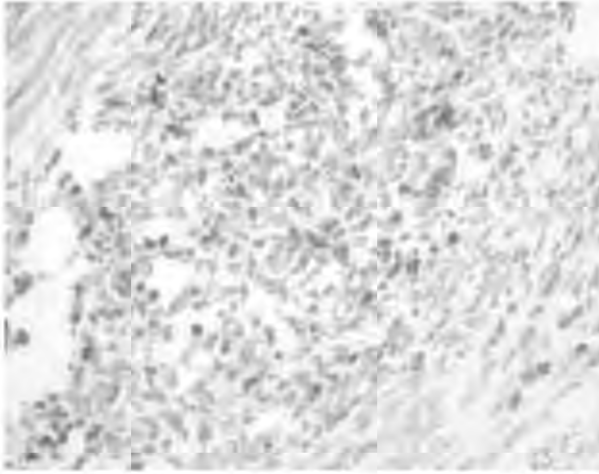
On gynecologic examination, any suspicious mass or another pathologic sign was not detected and cervix appeared normal. Endometrial thickness was established 4 mm. Bilateral ovaries and uterus appeared normal on vaginal sonography. Routine serum biochemistry, hematological evaluation and tumor markers (Ca-125: 11.1 IU/mL, Ca-19.9: 5.1 IU/mL, Ca-15.3: 1.9 IU/mL) were all within normal limits. Cervical cytology was obtained with the Thinprep technique. Extra-uterine atypical glandular cells were detected on cervical smear

(Picture 1). So that endometrial and endocervical curettage was performed to rule out a malignant process. As a result of histopathological examination of the specimen revealed that metastasis of invasive ductal breast carcinoma to endometrium. The patient underwent a total abdominal hysterectomy and bilateral salpingo-oophorectomy. Intra-abdominal organs appeared normal on inspection. The removed uterus measured 10 x 7 x 8 cm diameter. There was endometrial irregularity in uterine cavity. There was also suspicious involvement of ovaries. Metastasis of invasive ductal breast carcinoma to endometrium was detected with frozen examination. Final histopathological examination revealed that metastasis of invasive ductal breast carcinoma to endometrium, myometrium and bilateral ovaries. Tumor cells were stained positive with GCDFP-15 (Picture 2).

Immunohistochemical examinations showed that estrogen and progesterone receptors were positive. Cytology of peritoneal washings was negative for tumor cells. The postoperative period was uneventful. After the final pathology, chemotherapy was initiated for advanced breast carcinoma.



Picture 1. Cervico-vaginal smear including extra-uterine atypical glandular cells (Thinprep Technique).



Picture 2: Gross cystic disease fluid protein-15 expression in tumor cells (H.E X 200).

Discussion

Metastases to the female genital tract from extragenital cancers are uncommon. The most common extragenital tumors metastasizing to the female genital tract are breast and gastrointestinal carcinomas. If the metastases occur to genital system, ovaries are more often affected than the other organs. Despite uterus, cervix and vulva are more resistant sites for metastasis, the rate of uterine metastases from breast carcinoma varies from 2 to 15%. When the endometrium is involved with metastatic tumors, the tumor leads to infiltrate the stroma while preserving the endometrial glands and forms myometrial tumor nodules. About 90% of women with endometrial carcinoma have vaginal bleeding. Despite abnormal uterine bleeding is the most common symptom of metastatic uterine disease, less than 5% of patients may have not any gynecologic symptoms such as our patient (4). In the absence of symptoms, endometrial cancer may be detected as the result of investigation of abnormal cervical smear results. Liquid-based preparations (one of which is the ThinPrep) show promise with increased detection rates for endometrial cancer (5,6). Although the cervical smear is a useful adjunct to clinical investigation, it is difficult to distinguish metastatic carcinoma from primary tumors. It is not possible to make a definitive diagnosis without a tissue diagnosis. For this reason, the finding of endometrial metastasis from a breast carcinoma may not be sufficient to explain the abnormal cells on smear cytology and endocervical and endometrial sampling should be performed to exclude

any primary or metastatic tumors. Although there was not any symptom and finding on gynaecologic examination of this patient, abnormal cervical cytology facilitated the diagnosis of metastatic breast carcinoma. Further definitive diagnosis was made with endometrial biopsy.

Detection of the primary site can cause a major problem for metastatic tumors. These problems are solved easily with immunohistochemical studies. Gross cystic disease fluid protein-15 (GCDFP-15) is a glycoprotein which is isolated from human breast gross cystic fluid (7). It is present in normal apocrine gland and metaplastic apocrine cells of the breast. Immunohistochemistry for GCDFP-15 is a highly specific and sensitive marker to confirm primary breast origin for metastatic tumors (8). There were more important factors to contribute to diagnosis of metastatic breast carcinoma in our case. These factors include presence of medical history of breast carcinoma, detection of extra-uterine atypical glandular cells on cervical cytology and strong positivity with GCDFP-15 of tumor cells.

Tumors spread to uterus usually by direct extension from involved adjacent pelvic organs or peritoneal implants from ovarian metastasis. Uterine metastases are also occurred secondary to local lymphatic spread from ovarian metastases (3). If the ovaries are not involved, spread of tumors to uterus probably is hematogenous extension. Embolic metastases to uterus are very rare. It occurs especially from tumors of thyroid gland and gastrointestinal system. In this case, there was also bilateral ovarian involvement with breast carcinoma. Bilateral ovarian involvement probably contributed to the spread of this tumor to the uterus.

Metastatic spread to the uterus from an extragenital tumor is usually a manifestation of widespread dissemination. Therefore, the prognosis is usually poor and the patient can succumb due to metastatic disease within weeks or months. The effect of surgery on survival rate has not been determined yet (9). Unless the presence of metastatic disease in other sites such as lung and bone, surgery therapy can be performed to this patient for improve quality of life.

Consequently, patients who have breast cancer history must be examined periodically for any systemic and genital metastasis. If any suspicious symptoms and findings including abnormal uterine bleeding, abnormal cervical

lesion or cytology, uterine or adnexal masses are available, in order to detect any uterine metastasis of breast carcinoma, a detail systematic pelvic examination of these patients must be done timely. All abnormal results of cytology should be evaluated with colposcopy, directed biopsy, endocervical and endometrial curettage to detect early of primary or metastatic carcinoma.

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