

UNUSUAL PRESENTATION OF CERVICAL CARCINOMA METASTASIS TO THE BREAST: A CASE REPORT AND REVIEW OF THE LITERATURE

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SERVİKS KANSERİNİN MEMEYE SIRADIŞI METASTAZI:OLGU SUNUMU VE LİTERATÜR DEĞERLENDİRİLMESİ

ÖZET

Giriş: Serviks kanserinin memeye metastazı çok nadir rastlanılır.

Vaka: 34 yaşında FIGO evre IIIB serviks kanseri olan hastanın küratif kemoradyoterapi tedavisi sonrası rezidüel tümörü mevcuttu. Bir ay sonra sol meme ve akciğerde metastazları gelişti. Memeden alınan biyopsi ile serviks kanserinin metastazı olduđu tespit edildi.

Tartışma: Servikal kanserin memeye metastaz yapabileceđi akıldta tutulmalıdır.

Anahtar sözcükler: uterin servikal kanser, metastaz, radyoterapi

ABSTRACT

Background: Metastasis to the breast from cervical carcinoma is rarely seen.

Case: A 34-year-old woman with FIGO stage III-B cervical carcinoma received potentially curative chemoradiotherapy following which, there was residual tumor. One month later, she presented with metastasis to the left breast and the lung. Biopsy of the breast confirmed metastatic cervical carcinoma.

Conclusion: It should be remembered that breast metastasis might be seen in cervical cancer.

Key words: uterine cervical cancer, breast, metastases, radiotherapy

Introduction

The breast is an unusual site for metastatic disease. The incidence at autopsy is 1,2% to 6,6% of patients with extra-mammary carcinomas (1,2) however the clinical observed rate is lower at 0,5% to 1,3% (3). Melanomas, lymphoma, lung, soft tissue sarcomas, gastrointestinal and gynaecologic tumors are the most common primary sites (3-6). Within gynaecological cancers the ovary is the most common primary site (1,5,7), whilst metastases to the breast from cervical cancer are rare. The most common site of distant metastases from cervical cancer are lung, para-aortic lymph nodes, liver and the supraclavicular lymph nodes and unusually to brain, heart, skin, thyroid, spleen can also be seen (8,9). Since 1947 there have been 29 reported cases, therefore there is limited experience of diagnosis and management. We present the case of a patient with primary cervical carcinoma who developed breast metastasis one month after potentially curative treatment and a review of the literature.

Case report

S.S, a 34-year-old patient with FIGO stage IIIB cervical carcinoma was admitted to the Cerrahpasa Medical Faculty Department of Radiation Oncology. Pelvic examination revealed a bulky mass with involvement of the right parametria and anterior distal one third vagina. Physical



Figure 1. Left breast mass.

examination was otherwise normal. Pelvic magnetic resonance imaging (MRI) showed a 64x48 mm solid mass in the uterus cervix. Biopsy from cervical mass revealed keratinizing squamous cell carcinoma. No metastatic disease was found by CT scan. Hematological, liver and renal function tests were within normal limits.

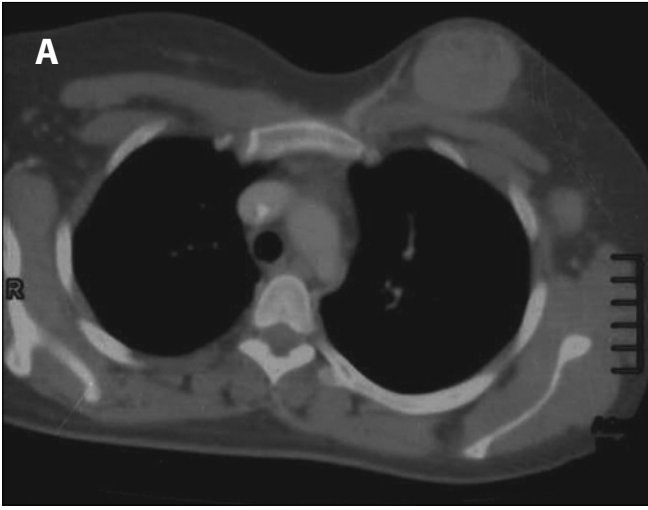
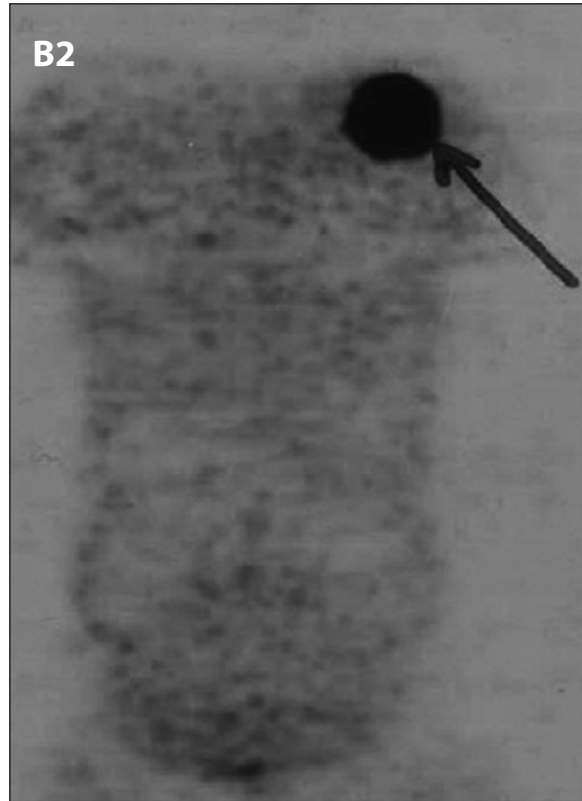
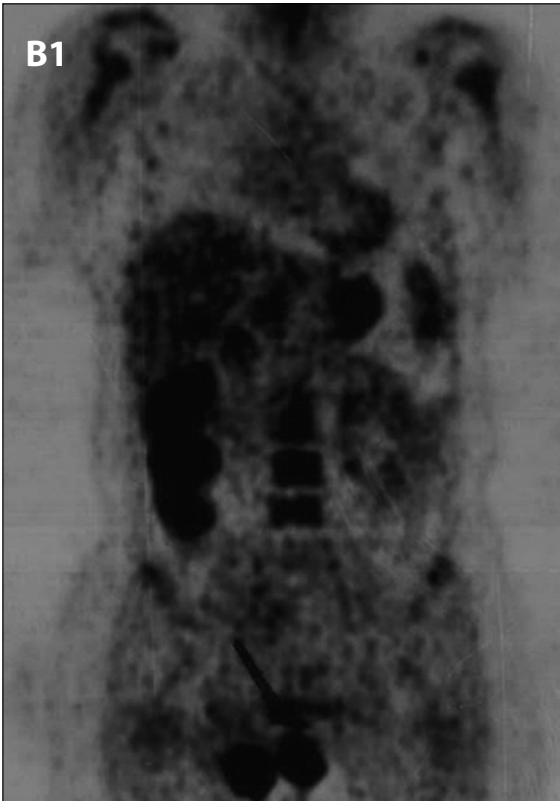


Figure 2. A. Thorax computed tomography.
B. PET-CT images of the patient.



The patient received a total radiation dose of 50.4 Gy in 28 fractions, five days per week, with 15 MV photons to the pelvis using a four-field box technique. The radiation field encompassed a volume that included the whole uterus, the primary mass, the paracervical, parametrial and uterosacral regions, as well as the external iliac, hypogastric and obturator lymph nodes. The AP/PA field extended 1.5 to 2 cm laterally to the widest bony margin of the true pelvis. The superior border of the field was the mid-point of L5, and the inferior border included a 2 cm margin from the lowest extension of the primary tumor. The anterior border of the lateral fields was the anterior one third of symphysis pubis,

and the posterior border was the S2-S3 interface based on the extent of the primary tumor. This was followed by a boost to the primary of 5.4Gy using anterior posterior fields. During external beam radiotherapy concomitant cisplatin (40mg/m² weekly) was administered. One week after external irradiation, high dose rate intracavitary brachytherapy to a dose of 27.5Gy to point A was delivered with Fletcher-Suit applicators.

One month after this treatment, she presented to us with a painless mass in her left breast. Pelvic examination revealed a residual tumor mass in the cervix. On breast examination there was a

Table 1. Characteristics of patients with metastatic breast tumor from cervical cancer.

Reference	n	Histopathology	FIGO stage	Localization of breast metastases	Treatment	Survival*
De Alvarez 1947 (21)	1	SCC	NS	Autopsy	NS	Dod
Speert and Greeley 1948 (8)	1	SCC	NS	L	CT	3 month
Badib 1968 (4)	4	NS	NS	Autopsy	3 RT 1 SR	4 Dod
Hadju and Urban 1972 (3)	3	SCC	NS	1 R 2 L	NS	2 Dod 1 alive
McCrea 1983 (15)	2	1 Adeno Ca 1 SCC	I II	NS	NS	Dod
Nayar 1987 (18)	1	Small cell anaplastic	IVB	Bilateral	NS	1.5 mo.
Ward 1989(19)	1	Adeno Ca	II	R. Inflammatory lesion	RT	NS
Singh 1990(22)	1	SCC	II	R	SR+RT	LFU
Kelly 1991 (23)	1	Adenosquamous	I	NS	RT	Dod
Schumacher 1992 (24)	2	NS	III II	NS	NS	NS
Yountan 1992 (12)	1	SCC	II	NS	RT	NS
Van Ooijen 1993 (25)	2	1 Adeno Ca. 1 SCC	II III	L R	CT CT	18 mo. 4 mo.
Kumar 1994 (13)	1	SCC	II	NS	CT+RT	20 mo.
Kelkar 1997 (14)	1	Adenosquamous	I	L	RT	NS
Gupta 1997 (5)	1	NS	III	Bilateral	-	LFU
Moore 1998 (7)	1	SCC	III	R	NS	NS
Muttarak 1998 (20)	1	SCC	NS	Bilateral	NS	NS
Kumar 1999 (16)	1	SCC	III	R	CT	3 mo.
Wurdinger 2000 (17)	1	Neuroendocrine small cell ca.	IVB	R	CT	1 mo.
Bardetella 2003 (11)	1	SCC	NS	NS	NS	NS
Fulcinitti 2008 (26)	1	Serous carcinoma	III	R	CT	NS
Present study 2008	1	SCC	III	L	CT	3 mo.

Dod: Died of disease, **NS:** Not stated, **SCC:** Squamous Cell Carcinoma, **RT:** Radiotherapy, **CT:** Chemotherapy, **SR:** Surgery, **L:** Left, **R:** Right, **n:** number of patients, **mo:** month, ***:** survival survival after breast metastases

5x5 cm mobile mass, firm to hard consistency with no evidence of skin tethering or nipple retraction in the left breast. She had no pain and tenderness in her left breast. An approximately 2 cm left axillary lymph node was also found. The right breast was normal (Figure 1). Fine needle aspiration of the breast mass revealed squamous cell carcinoma with the same morphological features of the primary cervical cancer.

The patient had a chest computed tomography which showed a 50x55 mm mass in left breast, a 2 cm lymph node in the left axillary region and metastatic nodules in the lung. PET-CT (Positron emission tomography - computed tomography) confirmed these findings but in addition a vaginal mass, bilateral inguinal lymph nodes and metastases to the right ischium (Figure 2a-b). She received three cycles of palliative chemotherapy (paclitaxel 285 mg/

m² and cisplatin 120 mg/m²). However, she died of disease after 3 courses of chemotherapy.

Discussion

Invasive cervical cancer is one of the most common malignancies in women (10). The incidence of, and the mortality from cervical cancer have steadily declined over the past five decades, because of the successful implementation of screening programs (9). The disease spreads to adjacent structures such as pelvic and paraortic nodes by lymphatic dissemination and to distant organs by haematogenous spread (9). The most common distant metastatic sites are liver lung and bone and rarer sites include brain, heart, skin, eyes, thyroid and spleen (4,9). Distant metastasis from cervix cancer to the breast are extremely rare. Frequencies of metastasis to the breast have been reported in 0.5-6.6% in clinical

and autopsy studies (1-3,6). The most common primary sites of metastasis to breast are malignant melanoma, lymphoma, lung cancer, soft tissue sarcoma, ovarian carcinoma and gastrointestinal tumors (3-6).

Metastases to the breast usually present as a palpable, mobile mass in the breast (6,11). Although pain, tenderness and/or discharge are usually absent in patients with metastases to breast, Hajdu et al reported that more than half of patients complained of pain and discomfort (2,3,11). Metastases in the breast are usually located in the upper outer quadrant of the left breast. They are often superficial and sharply demarcated, similar to primary breast carcinomas (2,3,6). Although axillary lymph node involvement has been frequently reported, nipple retraction, peau d'orange, and fixation to the chest wall are rarely seen (2,3,6,12-14). Metastases are rarely multiple, bilateral or diffuse. Bohman et al. showed that the left breast was more commonly affected (3,6,15). Most studies reported breast metastasis with widespread synchronous metastases (4,11).

It is difficult to distinguish metastatic disease from primary breast tumor and benign lesions such as cysts or fibroadenomas, especially in patients with extramammary primary tumors (16). On the mammography, metastases to the breast have non-specific features, typically well circumscribed margins without evidence of micro calcification or spiculations, features that would be more unusual in a primary breast cancer (6,11,13,14). Ultrasonography might be helpful in diagnosis (12). MRI findings are highly accurate in diagnosis of breast cancer especially in young patients with dense breast parenchyma. In the MRI mammography, primary breast malignancies have spiculated margins, low signal intensity on pre-contrast T1 and heterogeneous low signal intensity on T2-weighted images. After contrast administration, both the majority of invasive carcinomas and metastatic tumors show a rapid initial increase in signal intensity within the first 3 minute (17). There is no definitive enhancement criteria to differentiate metastasis from a primary breast carcinoma however, metastasis are generally seen as well-circumscribed round masses (14,17). We did not perform mammography and MRI of the breast as we already had histopathological confirmation.

There is a known increased incidence of breast cancer in women with previous gynaecological malignancy. It is important to exclude synchronous and metachronous neoplasms involving the breast in patients with known neoplasia because clinical management and expected outcomes are different (11).

Speert et al. reported one case of cervical carcinoma metastasizing to the breast in 1948 and could find only four other such cases in the literature (8). We found twenty-nine reports of patients with metastatic breast tumor from cervical cancer in the literature (Table 1). Generally, the metastatic spread to the breast occurs within 2 years of diagnosis (8,16-20). Kelkar et al. reported one case where the patient presented with breast metastasis (14). Yountan was presented a case where metastatic spread to the breast was observed after 9 years (12). Review of the reported cases shows that most presented with a palpable mass (Table 1). Bilateral breast metastasis were reported in 3 patients presentation with an inflammatory breast mass was reported in one patient (5,18,20). Of the twenty-nine reported cases, 9 patients had locally advanced and 10 had early cervix cancer at presentation (Table 1). Most of the patients were known to have widespread disease prior to metastasis to the breast and had a poor prognosis (4,7,8,16-18,19,21,22). The most common sites of synchronous metastases were the lung, bone, liver. Despite further treatment, mainly in the form of chemotherapy, most of the patients had a rapidly fulminating course and died within 1 year of presentation of breast metastasis (8,16-18). Comparable with the literature, our patient presented with palpable mass in the left breast and an axilla lymph node involvement and she had synchronous bone and lung metastases. She died of disease after 3 months.

In conclusion, metastatic spread to the breast from primary cervical cancer is very rare. Studies suggest that breast metastasis from cervical cancer are generally associated with widespread disease and have a poor prognosis. There is limited information about treatment of these patients. As clinical history and radiological presentation of breast metastases are not distinctive, the possibility of primary breast carcinoma should be kept in mind and the histological confirmation is needed.

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