



Diagnosis of Uterine Metastasis of Lobular Carcinoma of Breast Prior to Breast Cancer Detection in Imam Reza Hospital- Tehran

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Abstract

Metastasis of the breast cancer to the uterus happens in 8% of cases. In most of the reported cases, metastasis is detected following diagnosis and treatment of the primary cancer. Detection of metastases before diagnosis of the primary cancer is quite rare. Here, we report a case of invasive lobular breast carcinoma metastasized to the uterus with initial presentation of uterine myoma while she lacked any symptom related to breast cancer.

A 49 years old woman was admitted to Imam Reza hospital with a very large uterine leiomyoma or leiomyo-sarcoma. She was diagnosed with osteo-metastasis based on CT scan, whole body bone scan and elevated tumor markers. The pathology report of samples collected during laparotomy, subtotal hysterectomy, bilateral salpingo-oophorectomy, and colostomy revealed involvement of the uterus and leiomyoma with invasive lobular carcinoma of breast.

Keywords: Breast cancer, Invasive lobular carcinoma, uterine metastasis, Large uterine myoma

Introduction

Breast cancer is the most common cancer affecting women all over the world with 14% mortality rate, accounting for 23% of all cases [1]. Invasive ductal carcinoma (IDC) is the most prevalent type of breast cancer (%86) and invasive lobular carcinoma (ILC) is the next (%5- %15) [2]. Both types of cancer metastasize to other organs with almost the same rate [3]. Here, we report a case of invasive lobular breast carcinoma metastasized to the uterus and adjacent tissues with initial presentation of uterine myoma without any sign related to breast cancer i.e. cancer in its primitive site is diagnosed following diagnosis of the metastasized site.

Case Presentation

The patient is a 49 years old woman with three pregnancies and one miscarriage (G3 P2 Ab1). She suffered headache, fatigue, weakness, scapula and back pain for 7 months prior to admission. Three months before admission, her white blood cells count (WBC)

was 6600, hemoglobin (Hg) 10.7 and erythrocyte sedimentation rate (ESR) was 95. Abdomen and pelvis sonography revealed normal abdomen while a large heterogeneous mass (13 cm) was present in the uterus and ovaries (Figure 1).



Figure 1: Uterine Myoma.

In axial spiral computed tomography (CT) scan, a very large soft mass was seen in the uterus measuring 23x19x11 centimeter (cm). The right ovary was enlarged without definite mass lesions. Multiple sclerotic lesions were seen in the most vertebrae and both innominate bones. In addition to the presence of large uterus myoma, bone metastasis was also diagnosed (Figure 2). Patient was admitted to the oncology ward of the Imam Reza hospital- Tehran- Iran and bone marrow aspiration was performed. Her consultation was performed in the gynecology ward. Breast examination performed soon after was normal. Colonoscopy was also normal.



Figure 2: Uterus and Myoma.

Although breast sonography was reported normal but multiple adenopathy with central echogenicity, probably reactive type, were seen. Whole body bone scan indicated multifocal osteo-metastasis. Next laboratory tests measured Hg as 7.8, blood hematocrit (Hct)

27.2, C-reactive protein (CRP) +2, erythrocyte sedimentation rate (ESR) 125, Creatinine 1.5, cancer antigen (CA)19-9 75, CA125 758, CA15-3 > 1000, and carcinoembryonic antigen (CEA) was 47. Sonography and bone marrow aspiration performed after admission to the oncology ward indicated bilateral hydro-nephrosis, mild ascites, increased bladder wall thickness in trigone area, large uterus with large myoma (12x15 cm) and one cyst with thick septum in the right ovary (78x92 mm). Breast examination was normal except for right nipple retraction, which she claimed it was present for more than last 20 years. In abdominal examination we detected a large mass, extending up to the umbilicus. In vaginal examination with speculum, cervix and vagina were normal. Pap smear was examined and no epithelial cell abnormality was observed. Bimanual examination was also performed and there was a large mass occupying the entire pelvis up to above the umbilicus. Breast examination after gynecology consultation was normal.

During laparotomy, uterus was found as a large mass with adhesion to posterior and lateral walls of the pelvis. A rigid adhesion between the cervix and the bladder was noticed. Bone marrow aspiration following surgery revealed ILC metastasis and the pathology report of surgery showed extensive involvement of uterus and myoma-like mass with metastatic carcinoma suggestive of ILC of breast origin (Figure 3). The immunohistochemistry (IHC) analysis showed metastasis of ILC of breast origin to the uterine body. Estrogen receptor (ER) and progesterone receptor (PR) tests were positive (Figure 4) while CerB2 test was negative.

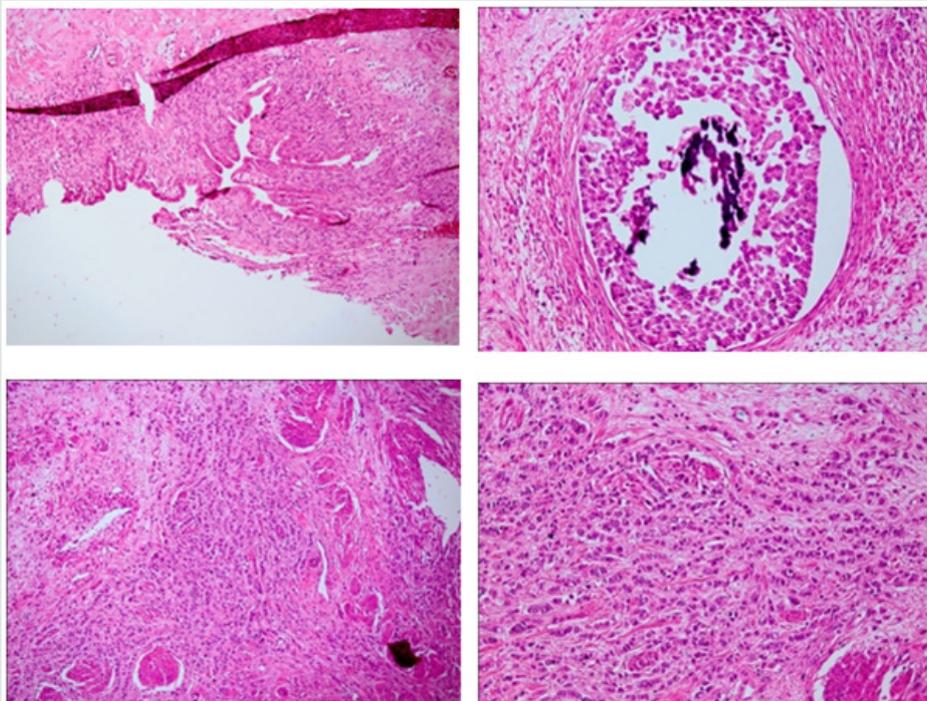


Figure 3: Tumoral cells infiltrating myometrial tissue.

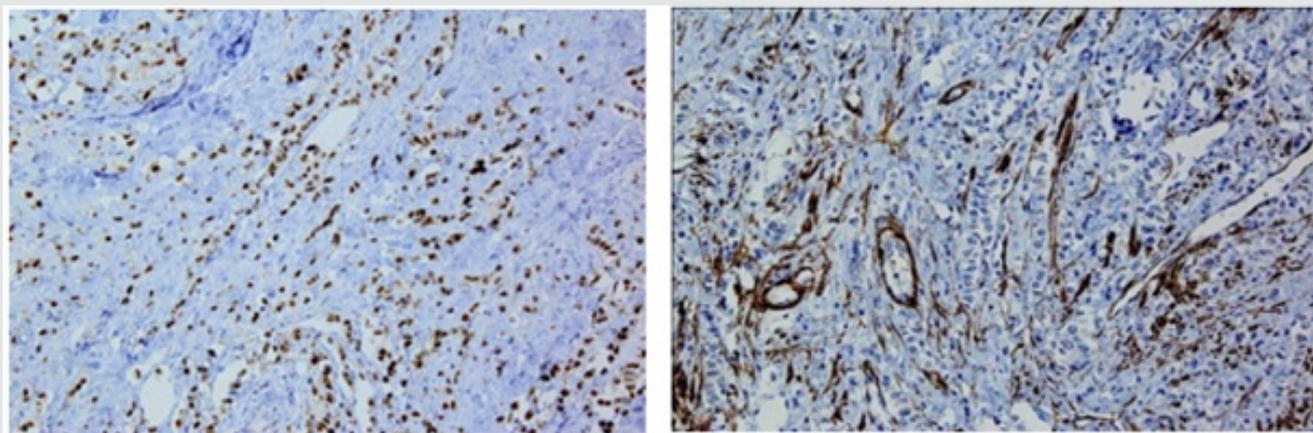


Figure 4: The neoplastic cells are positive with Estrogen Receptor marker.

Her general condition worsened, level of serum creatinine increased to 3.9 mg/dl and her Hg decreased to 6.6 g/dl. In addition to nausea and vomiting, she suffered bowel obstruction, for which laparotomy was performed. Subtotal hysterectomy, bilateral salpingo-oophorectomy and colostomy were also performed. On breast re-examination, no mass was detected. The patient's condition deteriorated after a month and she expired before mammography could be performed.

Discussion

Lobular carcinoma is the common type of breast cancer in women and in 60% of patients suffering invasive lobular carcinoma metastasis happens to peritoneum, ovary, and gastrointestinal tract at the time of diagnosis [4,5]. The rate of metastasis of invasive ductal carcinoma (IDC) and invasive lobular carcinoma (ILC) to gynecologic organs is about %0.8 and %4.5 respectively [3]. Lobular carcinoma is the type of breast carcinoma that frequently metastasize to gastrointestinal, gynecological and peritoneal organs. The identification of unusual metastasis is the characteristics of invasive lobular carcinoma [1].

Metastasis of cancer to ovaries happens in about 75.8% cases followed by involvement of vagina in 3.4% cases while uterine corpus is involved in 4.7%, cervix in 3.4%, vulva in 2% and salpinx in 0.7% cases. Uterine metastasis usually originates from the ovaries and its metastasis from the extra-genital sites are rare [6]. Data presented by MAZUR et al. indicated that involvement of only myometrium accounts for 63.5% of the total, followed by myometrium and endometrium (32.7%) while endometrium only is involved at the rate of 3.8% [7]. In the present case also, myometrium is involved. Invasive lobular carcinoma (ILC) has a desmoplastic reaction which sometimes is not very clear or there is no desmoplastic reaction at all [8]. The present case who was at the last stage of the disease, with involvement of the organs to which it was metastasized, the primary site lacked any sign of involvement.

On her breast examination also, nipple retraction was observed though she stated that it was so since long time ago.

Breast sonography has proved to be more sensitive for diagnosis of lobular breast carcinoma as up to %97.8 of patients had posterior shadowing [9]. As accuracy of breast sonography is high, we also advised it for diagnosis of probable abnormality for our case. In the present case, breast cancer metastasized to the uterus while she lacked symptoms in the breast. Her cancer propagated not only to the uterus but also it involved ovaries and adjacent bones. Its propagation exceeded much beyond the level of its propagation in the breast which was the source of uterine carcinoma.

Conclusion

Low incidence rate of invasive lobular carcinoma of breast metastasized to myometrium, poses a significant diagnostic challenge. It is important to note that in cases of endometrial or uterine cancer, metastasis from breast cancer should be kept in mind. Lack of any sign related to breast cancer does not exclude the possibility of breast cancer with a history of uterine cancer; rather it may be suggestive of endometrium metastatic disease. A precise diagnosis should be based on clinical history and immunohistochemistry to differentiate a metastatic breast cancer. To confirm the diagnosis, rapid endometrial sampling is to be performed. As sensitivity of breast sonography is high in detecting invasive lobular carcinoma of breast, it is to be performed for diagnosis of any abnormality of breast.

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