medicinska revija
medical review

UDK: 616.24-006.04
618.19-006
ID= 171928332

Božanić S. et al. Med Data Rev 2009;1(3): 59-61 MEDICAL DATA / Vol. 1 / Broj 3 Novembar 2009.

Prikaz slučaja/
Case report

METASTATIC LUNG ADENOCARCINOMA SIMULATING INFLAMMATORY CARCINOMA OF THE BREAST

MALIGNI TUMOR PLUĆA POD KLINIČKOM SLIKOM MASTITIS CARCINOMATOSA

Snežana Božanić[1], Čengeri Attila[2], Tot Tibor[3]

[1]Department of Pathology and [2]Department of Surgery, General Hospital, Subotica, Serbia, [3]Department of Pathology and Clinical Cytology, Falun, Sweden

Correspondence to:

dr Božanić Snežana,
Klinicki centar Vojvodine,
Centar za patologiju,
Hajduk Veljkova 1, 21000 Novi Sad,

E-mail: bozanics@gmail.com

Ključne reči/
tumori dojke, metastaze, karcinom pluća, karcinomatozni mastitis.

Key words:
Breast tumor, metastatic, pulmonary carcinoma, carcinomatous mastitis.

Apstrakt

Metastastatsko širenje malignih tumora u dojku je retka pojava, a metastaze koje imitiraju kliničku sliku karcinomatoznog mastitisa su izuzetno retke. Prikazali smo slučaj pacijentkinje stare 65 godina sa metastazom adenokarcinoma pluća u levu dojku. Dve godine nakon što je kod pacijentkinje dijagnostikovan adenokarcinom pluća pojavila se klinička slika karcinomatoznog mastitisa. Imunohistohemijska metoda je bila odlučujuća u postavljanju dijagnoze. Upotrebljena su sledeća antitela: TTF1, CDX2, ER, Napsin A i Surfactant B. TTF1, Surfactant B i Napsin A pozitivnost su ukazali na plućno poreklo adenokarcinoma, dok je ER i CDX2 negativnost govorila u prilog primarnog tumora van dojke i gastrointestinalnog trakta.

INTRODUCTION

Metastatic spread of extra-mammary malignancies to the breast is a rare phenomenon and representing about 2 % of tumors diagnosed in the breast. (1). Lymphoma, leukemia, malignant melanoma and lung carcinoma are the most common sources but ovarian cancers, carcinomas and carcinoid of gastrointestinal origin, transitional-cell carcinoma of the urinary bladder, prostatic, thyroid, liver, pancreas carcinoma and extremely rarely hepatoma and neuroblastoma of the retroperitoneum can also metastasize to the breast (1, 2, 3, 4, 5, 6, 7).

Cancers metastasis to the breast are often superficial, well circumscribed, solitary masses with a predilection for the upper outer quadrant. Multiple lesions, bilateral involvement and diffuse disease are less common (3). Involvement of the axillary lymph nodes is also common (3, 4, 8, 9). Metastases can also simulate primary inflammatory carcinoma of the breast (8,10,11) but this manifestation is extremely rare (12).

Case report:

Our patient was a sixty five years old woman with non - operable lung adenocarcinoma diagnosed in 2007. The diagnosis was confirmed by cytological examination of transtho-

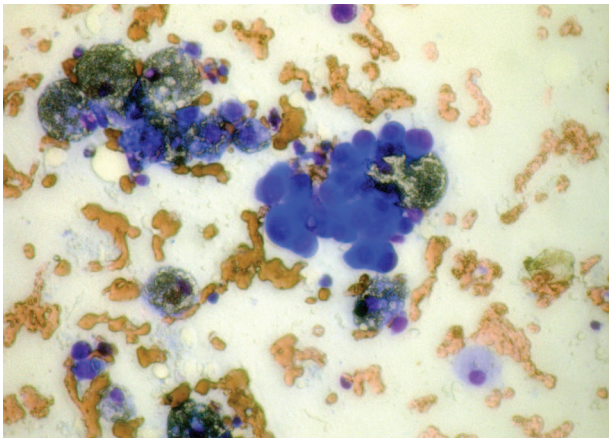

Fig. 1. Cytology of transthoracally fine - needle aspiration biopsy material (MGG, magnified 400).

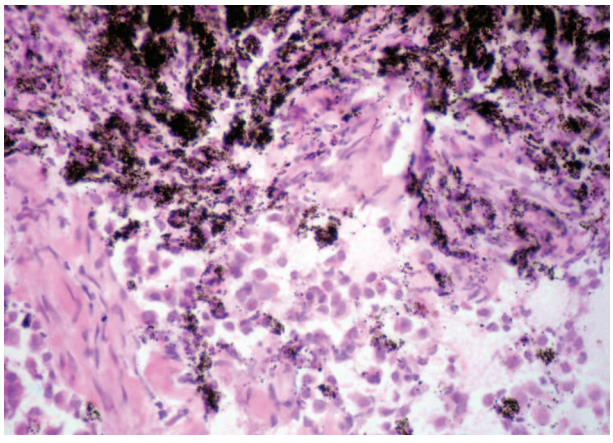

Fig. 2. Metastatic mediastinal lymph node - frozen section (HE, magnified 400).

Fig. 3. Clinical signs of inflammatory breast carcinoma.

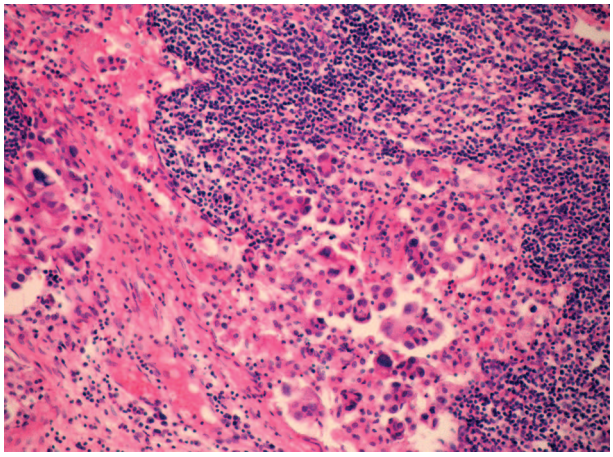

Fig. 4: Axillary lymph node with metastatic tumor tissue (HE, magnified 400).

racally fine - needle aspiration biopsy (Fig.1) and in bioptic samples of mediastinal lymph nodes on frozen section (Fig.2).

Chemotherapy treatment was started with gemcitabine - cisplatine protocol. After administration of four cycles, the treatment was changed to second line paclitaxel - cysplatine regimen. Because of allergic reaction the protocol was interrupted after firs administration. The proposed third line chemotherapy with erlotinib or gefitinib the patient refused. Percutaneous irradiation of the mediastinum was also done.

In may 2009 she was admitted to the surgery with enlarged, painful, warm left breast and skin erythema with peau d'orange (Fig 3) and axillary lymph node enlargement. No palpable mass was detected in the breast parenchyma.

Mammography and US examination of the breasts showed neither detectable mass lesion nor microcalcifications. The patient refused the proposed further examinations (CT and MR mammography).

To confirm the supposed diagnosis of inflammatory breast cancer excisional biopsy of the skin and axillary lymph node was done. Microscopic examination of the HE slides of the skin showed intracutaneous lymphatic and perivascular invasion by tumor tissue. The examined axillary lymph node contained metastasis of a moderately differentiated partly papillary adenocarcinoma (Fig. 4).

The immunophenotype of the tumor was demonstrated using the following antibodies: TTF1, CDX2, ER, Napsin A, and Surfactant B. The tumor cells showed TTF1 positivity, Surfactant B positivity, Napsin A positivity, indicating pulmonary origin of the adenocarcinoma. ER negativity and CDX2 negativity favored a primary site outside the breast and GI tract.

DISCUSSION

Breast metastases from extra mammary malignancies, especially that mimicking primary inflammatory breast carcinoma are extremely rare. Metastatic lesions of the breast only account for 0.4% to 6.6% of all breast malignant tumors and this difference is due to the inclusion or exclusion of hematopoietic malignancies and increased incidence in autopsy vs. clinical series (1, 3, 16). Metastatic deposits from extramammarian tumors may mimic primary benign and malignant neoplasmas of the breast. (11, 13). A correct diagnosis of metastasis to the breast is of considerable importance since the treatment of primary and secondary malignancies of the breast is different.

Lung cancer is the second most common type of malignancy and the leading cause of death from cancer. The most common histological type is adenocarcinoma, followed by squamous cell carcinoma, small cell carcinoma, large cell carcinoma, and bronchial carcinoid. Frequent metastatic sites for lung cancer include hilar nodes, adrenal glands, liver, brain, and bone. Cutaneous metastases from lung cancer are rare. Thus, lung cancer witch spreads to any of the above mentioned places are responsible also for the majority of skin metastases in man and is second only to breast cancer as the source of skin metastases in woman (14,15).

We demonstrated a rare case of metastatic lung adenocarcinoma presenting with typical clinical and radiological signs of inflammatory breast carcinoma. The metastases appeared two years after the primary tumor was diagnosed. Such interval period is reported from other authors (4). Beside clinical, radiological examination and standard HE staining, immunohistochemistry was performed to confirm the correct diagnosis.

The prognosis of metastatic inflammatory breast tumor is poor and according to the literature all patients died within 12 months or less after the diagnosis (3). Our patient died three months after the metastatic breast cancer was diagnosed.

In conclusion, the histological diagnosis of metastasis to the breast is more difficult than that of primary breast cancer. Immunohistochemistry has a crucial role in confirming the diagnosis.

Acknowledgment:

We are very thankful to Dr Laszlo Krenacs (Laboratory for tumor pathology and molecular diagnostic, Szeged) for all help with immunohistochemistry and microphotography.

We are also thankful to Prof. Živka Eri (Department of Pathology, Institute for Pulmonary Disease of Vojvodina) for cytology.

Abstract

Metastatic spread of extra-mammary malignancies to the breast is a rare phenomenon, lymphoma, leukemia, malignant melanoma and lung carcinoma being the most usual sources. The clinical and radiological manifestation of the disease corresponds to a rapidly growing palpable mass in most cases. Involvement of the axillary lymph nodes is also common. Metastasis can also simulate primary inflammatory carcinoma of the breast, but this manifestation is extremely rare.

A 65-year-old patient presented with enlarged, painful, warm left breast and skin erythema two years after that her non-operable lung adenocarcinoma was diagnosed. She was treated with four cycles of gemcitabine - cisplatina chemotherapy protocol, with one cycle of paclitaxel - cysplatina regimen, and percutaneous mediastinal irradiation. Because of the clinical findings typical of mastitis carcinomatosa, mammography and ultrasound examination of the breasts were performed showing no detectable mass lesion or microcalcifications. Microscopic examination of the HE slides of the excision biopsy of the skin showed intracutaneous lymphatic and perivascular invasion. The examined palpable axillary lymph nodes contained metastasis of a moderately differentiated partly papillary adenocarcinoma. The immunophenotype of the tumor was demonstrated using the following antibodies: TTFI, CDX2, ER, Napsin A and Surfactant B. The tumor cells showed TTFI, Surfactant Band NapsinA positivity indicating pulmonary origin of the adenocarcinoma, while ER and CDX2 negativity favored a primary site outside the breast and gastrointestinal tract.

A rare case of metastatic lung adenocarcinoma presenting with typical clinical and radiological signs of inflammatory breast carcinoma is demonstrated. Immunohistochemistry had a crucial role in confirming the diagnosis.

REFERENCES

1. Shi-ping Luh, Chih Kuo, Thomas Chang-yao Tsao. Breast metastasis from small cell lung carcinoma J Zhejiang Univ Sci B. 2008; 9(1):39-43.

2. Silverman JF, Feldman PS, Covell JL, Frable WJ.: Fine needle aspiration cytology of neoplasms metastatic to the breast. Acta Cytol. 1987;31(3):291-300.

3. McCrea ES, Johnston C, Haney PJ. Metastases to the breast. AJR, 1983;141:685-690.

4. Toombs BD, Kalisher L. Metastatic desease to the breast: Clinical, pathologic, and radiographic features. Am J Roentgenol 1977;129:673-676.

5. Jin-Young K, Eun-Kyung K, Ki Keun O. Radiologic findings of metastatic signet ring cell carcinoma to the breast from stomach. Yonsei Med J 2000;41(5):669-672.

6. Wood B, Sterrett G, Frost F, Swarbrick N. Diagnosis of extramammary malignancy metastatic to the breast by fine needle biopsy. Pathology 2008;40(4):345-351.

7. Sato T, Muto I, Fushiki M, Hasegawa M, Hasegawa M, Sakai T, Sekiya M. Metastatic breast cancer from gastric and ovarian cancer, mimicking inflammatory breast cancer: report of two cases. Breast Cancer 2008;15:315-320.

8. Hajdu SL, Urban JA. Cancers metastatic to the breast. Cancer 1972;29:1691-1696.

9. Nebesio CL, Goulet RJ, Helft PR. Billings SD. Metastatic esophageal carcinoma masquerading as inflammatory breast carcinoma. Int J Dermatol 2007;46(3):303-305.

10. Asakura H, Takashima H, Mitani M, Haba R, Seo R, Yokoe K, Toyama Y, Ohkawa M. Unknown primary carcinoma, diagnosed as inflammatory breast cancer, and successfully treated with trastuzunab and vinorelbine Int J Clin Oncol 2005(10):285-288.

11. Briest S, Horn L.C, Haupt R, Schneider JP, Schneider U, Hockel M. Metastasizing signet cell carcinoma of the stomach - Mimicking bilateral inflammatory breast. Cancer Gyn Onc 1999;74:491-494.

12. Hance FC, Mac Vaugh 3rd, Fitts WT Jr. Metastatic tumor to the breast simulating bilateral primary inflammatory carcinoma. Am J Surg 1966;112:932-935.

13. Domanski HA. Metastases to the breast from extramammary neoplasms. A report of six cases with diagnosis by fine needle aspiration cytology. Acta Cytol. 1996;40(6):1293-1300.

14. Mollet TW, Garcia CA , Koester G. Skin metastases from lung cancer Dermatology Online Journal 2009,15(5):1.

15. Terashima T. Minoru K. Lung cancer with skin metastasis. Chest 1994,106,1448 - 1450.

16. Fulciniti F, Losito S, Botti G, Di Mattia D, La Mura A, Pisano C, Pignata S. Metastases to the breast: Role of fine needle cytology samples. Our experience with nine cases in 2 years. Ann Oncology 2008,19:682-687.

The paper was received 18.11.2009/ Accepted 26.11.2009.