

Breast Metastasis of Rhabdomyosarcoma: A Case Report

Süreyya K. Soyupak, MD, Figen Binokay, MD, Medih Çeliktaş, MD, Mehmet İnal, MD, Erol H. Aksungur, MD.

Metastasis to the breast in the pediatric age group is extremely rare. After leukemia and lymphoma, rhabdomyosarcoma and neuroblastoma are the most common tumors to metastasize to the breast in this age group. Without a known primary, the diagnosis can be a challenge. Here, a pediatric patient with widespread metastases to both breasts from embryonal rhabdomyosarcoma imaged by ultrasound and magnetic resonance is presented. *Ann Med Sci* 2001;10:131-132

Key words: breast metastases, rhabdomyosarcoma

Metastasis to the breast in the pediatric age group is extremely rare. In this paper, we report a 12 year-old girl with widespread metastases to both breasts from embryonal rhabdomyosarcoma.

Case Report

A twelve year-old girl with a right axillary mass underwent excisional biopsy. The mass was removed completely. Pathological examination revealed embryonal rhabdomyosarcoma. Chemotherapy was given. Eight months after the first operation, recurrent tumor in the same location was found as well as painful masses in both arms and on the dorsum of right hand. In the computed tomography (CT) of thorax, there were numerous soft tissue masses in the lung and upper extremities consistent with metastasis. Also, on physical examination, there were palpable, non-tender, non-mobile firm breast masses bilaterally. Bilateral multiple hypoechoic, well-circumscribed parenchymal masses were noted in every quadrant of the breast in ultrasonography. The size of the masses ranged from 6 to 12 millimeters (Figure 1). It was decided that no additional imaging was necessary for these breast lesions; however, multiple nodules were noted on magnetic resonance images (MRI) done for other purposes.

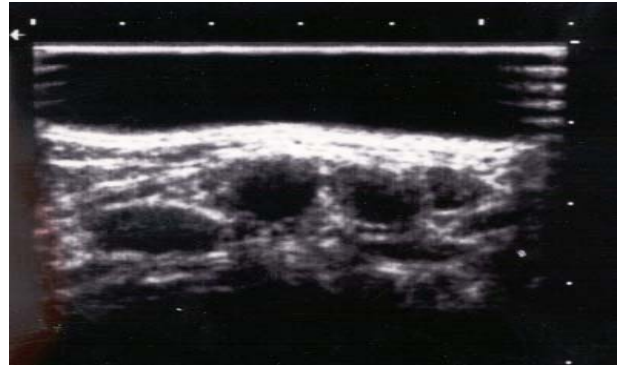


Figure 1. Ultrasonographic view of the breast shows multiple, well-circumscribed hypoechoic nodules in the breast parenchyma.



Figure 2. On T2-weighted MR image, multiple, hyperintense well-circumscribed nodules are seen in both breasts.

Originally received: July 07, 2000.
Revision accepted: April 18, 2001.

Çukurova University Faculty of Medicine, Department of Radiology, Adana-TÜRKİYE,

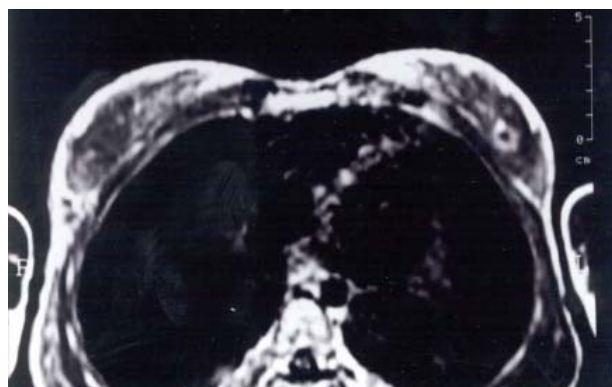


Figure 3. On T1-weighted contrast enhanced image, a ring-type enhancing nodule is seen in the left breast.

They were hyperintense on T2 and some had ring-type peripheral enhancement after contrast administration (Figure 2,3). Since there were multiple metastases elsewhere, the breast lesions were accepted as metastasis from the primary tumor. No biopsy was done; however, with vigorous chemotherapy, the lesions decreased in size and some disappeared.

Discussion

Clinically evident metastatic disease of the breast is rare. It represents 1.2-6% of all breast tumors, the higher figure representing the series where lymphoma and leukemia are included¹. In adults, most series report an association with melanoma and carcinoma of the bronchus and prostate^{1,2}. Except for leukemia and lymphoma, metastatic tumors of the breast are even more rare in children. In this age group, after leukemia and lymphoma, rhabdomyosarcoma and neuroblastoma are the most common tumors that metastasize to breast^{3,4}.

Cancers metastatic to the breast are often superficial, sharply marginated and solitary masses with a predilection for the upper outer quadrant. Multiple lesions, bilateral involvement and diffuse disease are less common. Pain, tenderness and discharge are usually absent⁵.

Histologic diagnosis of metastasis to the breast can be more difficult than the primary breast cancer⁵. It poses a greater problem in

children with no known primary. Primary malignant breast tumors in this age group are cystosarcoma phylloides, lymphoma, rhabdomyosarcoma and adenocarcinoma. Secondary tumors, being more common in children, are accompanied by widespread involvement of the primary malignancy at the time of presentation^{3,4}.

Howarth et al. reported seven cases of breast metastases from 108 cases of rhabdomyosarcoma under the age of 20. Ages of these seven cases, two males and five females, ranged from 11-20 years. No breast metastasis was seen under the age of ten; so they have questioned an association of breast metastasis with developmental age of the patient and the physiologic state of the breast. All had primaries on extremities like ours did, but the histology in all seven was of the alveolar type. Our case had a histology of embryonal subtype.

Metastases from rhabdomyosarcoma can be seen as subcutaneous or intraparenchymal nodules. Our patient had only parenchymal involvement. Since breast tissue is very dense in this age group, mammography is non-yielding most of the time. Therefore, ultrasonographic examination is the method of choice³. Also, CT and sometimes MRI, done for staging purposes in these patients, can better demonstrate the nature of the lesions. When there is doubt about the histology of the breast mass, an imaging guided tru-cut or fine needle aspiration biopsy can be performed for confirmation.

References

1. Howarth CB, Caces JN, Pratt CB. Breast metastases in children with rhabdomyosarcoma. *Cancer* 1980; 46:2520-2524.
2. Toombs BD, Kalisher L. Metastatic disease to the breast: clinical pathologic and radiographic features. *Am J Roentgenol* 1977; 129:673-676.
3. Soyupak SK, Şire D, İnal M. Secondary involvement of breast with non-Hodgkin's lymphoma in a pediatric patient presenting as bilateral breast masses. *EJR* 2000(accepted to be published)
4. Meyer JE, Kopans DB, Long JC. Mammographic appearance of lymphoma of the breast. *Radiology* 1980; 135:623-626.
5. McCrea ES, Johnston C, Haney PJ. Metastases to the breast. *AJR* 1983; 141: 685-690.