

## Case of Secondary Breast Tuberculosis Which is Developed with Local Spread

Lokal Yayılım ile Gelişen Sekonder Meme Tüberkülozu Olgusu  
Radyoloji

Başvuru: 15.01.2015  
Kabul: 22.06.2015  
Yayın: 09.07.2015

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### Özet

Yirmi sekiz yaşındaki bayan hasta iki aydır devam eden öksürük balgam ve gece terlemesi şikayeti ile göğüs hastalıkları polikliniğine başvurdu. Balgamda aside dirençli basil pozitif bulunması üzerine hastaya akciğer tüberkülozu tanısıyla antitüberküloz tedavi başlandı. Tedavinin ikinci ayında akciğer tüberkülozunun plevraya ve memeye lokal yayılımı gözlemlendi. Olgu sekonder meme tüberkülozu tanısı aldı ve antitüberküloz tedaviye ek olarak cerrahi drenaj yapıldı. Bu olgu sunumuyla, sekonder meme tüberkülozunu, güncel literatür eşliğinde tartışmayı amaçladık.

**Anahtar kelimeler:** Manyetik rezonans görüntüleme, Meme Tüberküloz Ultrasonografi

### Abstract

A 28-year-old female patient presented with complaints of cough that had continued for two months, sputum, and nocturnal sweating. As the sputum acid-fast bacilli was positive, anti-tuberculosis treatment was initiated. In the second month of treatment, pulmonary tuberculosis spread locally to pleura and breast. The case was diagnosed as secondary breast tuberculosis and surgical drainage was added to treatment. In this case report we aim to discuss the secondary form of breast tuberculosis with a discussion of the current literature.

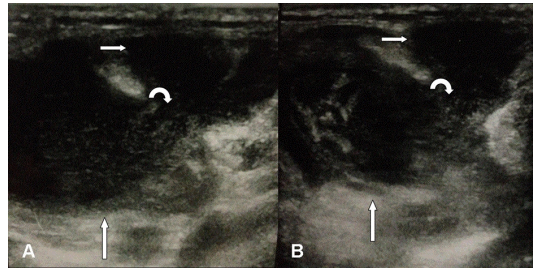
**Keywords:** Breast, Magnetic resonance imaging Tuberculosis Ultrasonography

### Introduction

Tuberculosis is one of the earliest diseases known in the world. Breast involvement is a rare form of this disease. While the incidence of breast tuberculosis among all the breast lesions is 0.1% in developed countries, this rate is 4% in developing countries where tuberculosis is endemic<sup>1,2</sup>. It is differentiated into two categories as primary and secondary. In primary breast tuberculosis, only the breast is affected. In secondary breast tuberculosis, there is a primary tuberculosis focus, apart from the breast. Spreading ways to the breast are; hematogenous, directly by intervention of the thoracic wall or retrograde from the lymph nodes<sup>3</sup>. The current case report aimed to present secondary breast tuberculosis that is quite rare.

### Case Report

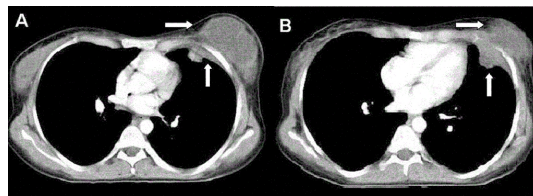
A 28-year-old female patient presented with complaints of cough that had continued for two months of sputum and nocturnal sweating. As the sputum acid-fast bacilli (ARB) was positive, anti-tuberculosis treatment of isoniazid, rifampicin, pyrazinamide, ethambutol (HRZE) was initiated. In the second month of treatment, pulmonary tuberculosis spread locally to pleura and breast. ARB was positive in the samples taken from pleural fluid and breast abscess. The tuberculin skin test measured 21 mm and sedimentation was 88 mm/hour. Breast US revealed a collection area in the left external quadrant showing association with the pleura (Figure 1 A-B).



**Figure 1**

A-B, breast US reveals a collection (short arrow) in the left breast's external quadrant shows association with pleura (long arrow). Curved arrow marks the intercostal space

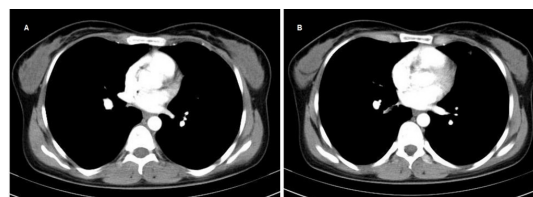
Chest tomography (CT) showed pleural fluid in the left lung upper zone extending to left breast with the parenchymal infiltrations. (Figure 2 A-B).



**Figure 2**

A-B, Contrast enhanced thorax CT shows, abscess in the breast tissue and in the left lung upper zone pleural fluid extending to the breast tissue (arrows).

As the symptoms in breast continued, surgical drainage was applied. Antituberculosis therapy consisted of HRZE in thr first three months. Despite of the fact that there was sensitivity to medications, it took 6 months to achieve ARB negative results. Thus HR therapy was completed to one year. After one year of treatment, there was full recovery in the radiologic imaging (Figure 3 A-B).



**Figure 3**

A-B, After one year of treatment, there was full recovery in the radiologic imaging.

## Discussion

Breast tuberculosis is often seen in the 20-40 years age group of fertile women. The lesion is usually unilateral. Both the left and right breasts are affected at an equally frequent rate. Though the most common involvement is the upper external quadrant, it may be seen anywhere in the whole breast<sup>4</sup>. It is argued that pregnancy and the lactation period make the breast susceptible to tuberculosis<sup>5</sup>. Our case was in the fertile age group, the lesion was unilateral and in the external quadrant.

The tuberculin skin test is frequently positive. However, positive tuberculin skin test is a non-specific finding. It reflects whether if the individuals' immune system had been contaminated with tuberculosis bacilli previously in

an active or passive way. Detection of ARB in the fresh tissue culture is the most important diagnostic criteria, however it is quite difficult even with the procedures of present day. The positive ARB incidence in excisional biopsies of certain breast tuberculosis patients was reported to be between 12% and 22.7%<sup>6,7</sup>. Diagnosis is confirmed histopathologically by showing Langerhans giant cells, epithelioid granuloma and lymphohistiocytic aggregates<sup>8,9</sup>. In our case, ARB of the material taken from sputum, pleural fluid and breast was positive.

While the incidence of breast tuberculosis in the cases of pulmonary tuberculosis was very low, a 60% incidence of non-breast organ tuberculosis was reported in the cases of breast tuberculosis. These cases are defined as "secondary breast tuberculosis". The bacilli might reach to breast tissue hematogenously, directly from adjacent tissues and more frequently by retrograde lymphatic route<sup>4,5</sup>. Our case was due to the local invasion of pulmonary and pleural tuberculosis and was evaluated as the secondary form.

Breast infections with fistula formation to skin, tuberculosis should be considered in differential diagnosis. Also the differential diagnosis should include breast cancer, pyogenic breast abscess, actinomycosis infection,(which is quite rare), breast cysts, traumatic fat necrosis, and granulomatous syphilis<sup>5</sup>.

In the our case, these were ruled out due to production of direct bacilli.

Without histopathological confirmation, malignancy and breast tuberculosis cannot be differentially diagnosed by imaging procedures alone<sup>10</sup>.

Though in the recent past, total excision and even simple mastectomy was performed in the treatment of breast tuberculosis, today it concentrates on anti-tuberculosis treatment as the first choice. It is reported that in a case of lesions with small dimensions anti-tuberculosis treatment alone could be sufficient<sup>5</sup>.

If the response to medical treatment is not complete, surgical treatment (cold abscess drainage, extraction of residual mass) is performed. Simple mastectomy must be considered in cases of ulcerative mass with prevalent pain<sup>11</sup>. Both abscess drainage and anti-tuberculosis treatment was applied to our case. There was a good response to treatment.

Although nowadays there is a significant decline in tuberculosis incidence due to the application of efficient vaccinations and treatment methods, mycobacterium tuberculosis infections are still a public health problem, especially for developing countries. Secondary tuberculosis of the breast is a rare entity when compared to pulmonary tuberculosis. Tuberculosis should be considered in fistulized breast abscesses, especially in young patients.

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