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Primary breast tuberculosis. A case report

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Background. *The differential diagnosis of primary breast tuberculosis with other benign or malignant conditions can be difficult with the current imaging techniques that used to recognize breast pathologies. In many cases mammographic and ultrasound characteristics of breast tuberculosis are similar to those of breast cancer.*

Case report. *We present a case of primary breast tuberculosis, with no previous history of the disease, which was diagnosed during the operation.*

Conclusions. *Primary breast tuberculosis can be misdiagnosed. In these cases a tuberculosis infection history is negative, the mammographic and radiological findings obscure and the mass can be misdiagnosed as carcinoma. The diagnosis is achieved after the surgical removal of the mass and histological examination of the specimen.*

Key words: breast diseases; tuberculosis; female genital

Introduction

Breast tuberculosis is a rare pathology, with a very low incidence ranging from 0.1-0.5%. Breast, spleen and skeletal muscles seem to be relatively immune to tuberculous infection. In non-endemic countries breast tuberculosis is 3-4.5% of all breast pathologies. In non-endemic countries breast tuberculosis is rare, and usually is secondary through haematogenous spreading from other infected organ.[1-3]

Primary breast tuberculosis in non-endemic countries is so rare that only a few cases had been reported till now. The clinical and radiological (mammographic, ultrasound) characteristics of breast tuberculosis are similar to those of other breast pathologies; in young masquerades as abscess and in elderly ones as cancer. So, if there is no history known, then, the diagnosis is very difficult to be established.[4-6]

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Case report

A 65-year-old woman admitted to our surgical department complaining of a mass in the upper quadrant of the right breast. The patient discovered the palpable mass 12 days ago. The patient's and family history were clear, except of a mild hypertension pharmaceutically treated. The findings at physical exami-

nation were a non-tender, palpable, mobile mass extending from the skin to the chest wall. No skin or nipple alterations observed. Auxiliary lymph nodes were present consisting block. The examination of the other breast showed no findings. We performed mammography (craniocaudal and lateral view), which showed a mass in the upper quadrant of the right breast, with mild skin retraction, with malignant characteristics (Figure 1). Breast ultrasound showed a well-defined nodular lesion with heterogeneous echo pattern posterior to acoustic enhancement. The lesion considered being malignant, and no fine needle aspiration cytology received. The resection of the tumour and auxiliary lymph nodes dissection decided to be performed therapeutically.

At operation tumour was excised in healthy tissue and sent to cryobiopsy, which showed no malignant cell, but tyroid necrosis of the tissue, compatible with the inflammatory disease. No lymph nodes were removed. The pathological examination of the specimen showed that the mass was tuberculous. Mantoux test was positive. The full examination (x-ray, CT, etc) showed that tuberculosis was nowhere else; that means that breast tuberculosis was primary. The patient received anti-tuberculosis therapy (3 drugs combined therapy) for 9 months. There has not been recurrence for 4 years of the follow-up.

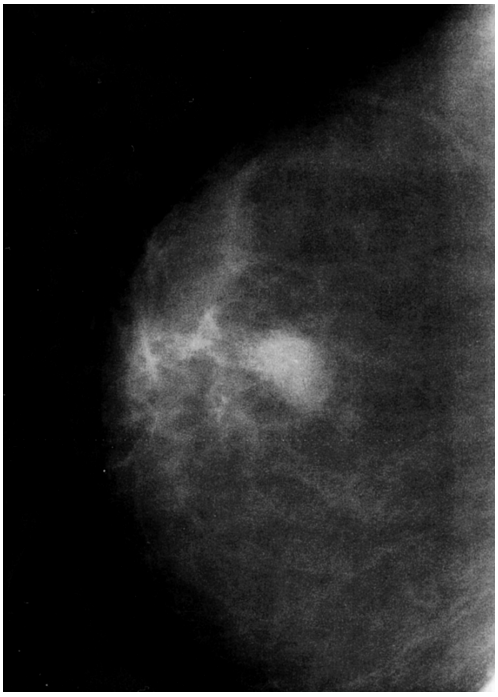

Figure 1. Mammography of primary breast tuberculosis mimics breast cancer. The findings were obscure and the diagnosis set by cold biopsy.

Discussion

Breast tuberculosis identified as primary and secondary. In the primary, breast is the only site of the disease in patients with no history of tuberculosis. In the secondary, mainly haematogenous spreading or direct extension infects breast after a contact with an infected material. The mycobacterium can infect breast haematogenous from auxilla, lungs, ribs and articular lesions, or can be infected by a direct contact through nipple, abrasions of the skin or lactiferous duct.[1,4,5,7]

Three types of breast tuberculosis have been described. The most common type is nodular disease, which is growing slowly and masquerades carcinoma on mammography. The second type, which also mimics carcinoma, is the diffuse type, which presents multiple foci. The third type is the sclerosing, which is painful and more common in the elderly.[3,4,8,9]

The differential diagnosis is quite difficult, and includes cancer, mastitis, sarcoma, actinomycosis, granulomatous mastitis, etc., although it's not uncommon that more than one pathologies in the same breast coexist.[9,10]

The most common symptoms are a palpable breast with or with no auxiliary lymph nodes, usually painful with sometimes nipple discharge.[5,7]

Mammographic findings are not always specific for breast tuberculosis, which can be

misdiagnosed as fibroadenoma or adenocarcinoma (inflammatory or scirrous). The two mammographic findings that are specific for breast tuberculosis are »skin bulge« and the »sinus tract site«. Ultrasonography may resemble cystic lesion, or indicates a hypoechoic heterogeneous mass with irregular borders. CT is useful in the diagnosis, particularly between primary and secondary tuberculosis as can indicate lesions in other sites.[4,6,8-10]

More accurate information can be achieved by fine needle aspiration biopsy, which can demonstrate a granulomatous inflammatory lesion with central cessation.[7]

Many cases can be misdiagnosed and the diagnosis achieved after the surgical removal of the mass and histological examination of the specimen. In these cases a tuberculosis infection history is negative, the mammographic and radiological findings obscure and the mass misdiagnosed as carcinoma.[3,7,9]

In primary breast tuberculosis the indicated treatment consists of the surgical removal of the mass and the anti-tuberculosis therapy with isoniazide, pyrazimanide, ethamboutole and rifampikin for the period from 9 months to 2 years.[2,10]

The increasing tuberculosis incidence in Western countries may also increase the incidence of breast tuberculosis.

In conclusion, primary breast tuberculosis is an uncommon breast pathology, which can mimic adenoma or carcinoma and can be misdiagnosed especially in patients with no previous history of the disease. The fine needle aspiration biopsy can lead to a correct diagnosis, which is finally achieved with the histological examination of the specimen. Patients with breast tuberculosis should undergo a surgical removal of the tumour and a long time anti-tuberculosis therapy.

References

1. Gupta R, Gupta AS, Duggal N. Tubercular mastitis, *Int Surg* 1982; **67:** 422-4.
2. Zandrino F, Monetti F, Gandolo N. Primary tuberculosis of the breast. A case report. *Acta Radiol* 2000; **41:** 61-3.
3. D'Orsi CJ, Feldhaus L, Sonnenfeld M. Unusual lesions of the breast. *Radiol Clin North Am* 1983; **21:** 67-80.
4. McKeown KC, Wilkinson KA. Tuberculosis of the breast. *J Surg* 1962; **103:** 424-7.
5. Raven RW. Tuberculosis of the breast. *Br Med J* 1949; **2:** 734-7.
6. Gilbert AI, McCough EC, Farell JJ. Tuberculosis of the breast. *Am J Surg* 1962; **103:** 424-7.
7. Wilson TS, MacGregor JW. The diagnosis and treatment of tuberculosis of the breast. *Can Med Assoc J* 1963; **89:** 1118-24.
8. Estrin J, Bernstein M. Tuberculous mastitis. *South Med J* 1994; **87:** 1151-2.
9. Alagaratnam TT, Ong GB. Tubereculosis of the breast. *Br J Surg* 1980; **67:** 125-6.
10. Wilson JP, Chapman SW. Tuberculous mastitis. *Chest* 1990; **98:** 1505-9.