

Breast Tuberculosis: A Case Report

N. Benaouicha^{1*}, F. Louzali¹, Y. Essabagh¹, A. Lakhdar¹, A. Baidada¹

¹Gynecology-Obstetrics and Endoscopy Department, Maternity Souissi / University Hospital Center IBN SINA, Rabat, Morocco

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*Corresponding author: N. Benaouicha

Gynecology-Obstetrics and Endoscopy Department, Maternity Souissi / University Hospital Center IBN SINA, Rabat, Morocco

Abstract

Case Report

Mammary tuberculosis is a rare condition. Early diagnosis is often difficult. Mammary tuberculosis simulates other much more common breast diseases, in particular cancer in older women, and can only be diagnosed definitively by histopathological examination in the presence of epithelio-giganto-cellular granulomas with caseous necrosis. We report a case of mammary tuberculosis in a 42-year-old woman to raise the problem of diagnosis.

Keywords: Tuberculosis, Antibacillary Treatment, Caseous necrosis, Breast Cancer.

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INTRODUCTION

Tuberculosis is a transmissible infectious disease caused by *Mycobacterium tuberculosis* (bacillus Koch or BK). According to estimates by the World Health Organization (WHO), it is a major cause of morbidity and one of the 10 leading causes of mortality worldwide [1], and the second leading cause of death from infectious diseases after infection with the human immunodeficiency virus (HIV) [2], making it a major public health problem affecting over a billion people worldwide [1, 2].

HIV-infected cases are 20 to 30 times more likely to develop progressive tuberculosis. The risk is also higher for those suffering from other conditions that weaken the immune system [3]. Smoking greatly increases the risk of progressive tuberculosis and death. It is involved in over 20% of tuberculosis cases worldwide [3].

Extrapulmonary forms of TB (EPTB) are frequent, reaching 20 to 40% depending on the series. They are more frequent in blacks, women and immunocompromised patients.

Certain localizations are rare or even exceptional, and mammary tuberculosis ranks last among visceral localizations. Mammary tuberculosis is a rare form of extra-pulmonary tuberculosis, even in endemic countries. It accounts for 0.06 to 0.1% of all tuberculosis localizations [4, 5]. It was first described in 1829 by Sir Ashley Cooper as a "cold tumor of the breast" [6]. This localization is rare, and ranks last among the visceral localizations of tuberculosis [7]. In

fact, only 500 cases of mammary tuberculosis have been described in the literature [6]. It can be either primary or secondary [8]. In the primary form, the only identifiable focus of tuberculosis is in the mammary gland, whereas in the secondary form, it forms part of a more generalized picture [8]. Clinical and imaging findings are not specific to this condition, which needs to be distinguished from other breast pathologies, especially breast cancer, to avoid investigations and therapies that are sometimes mutilating. Indeed, mammary tuberculosis is often mistaken for a cancerous lesion, and the diagnosis can only be made if the anatomopathological examination reveals the classic appearance of epithelioid granuloma with caseous necrosis, or by the demonstration of mycobacterium on bacteriological study [5].

In this article, we report a case of primary mammary tuberculosis.

CASE REPORT

Mrs N.D, aged 42 and a multiparous g4p5, with no previous history of tuberculosis, presented with an isolated nodule in the superior-internal quadrant of the left breast, discovered by self palpation 4 months ago and gradually increasing in size, without pain or signs of cutaneous inflammation, associated with mastodynia of the same breast. Clinical examination revealed a nodule 5 cm in diameter, mobile in both superficial and deep planes, with no skin lesions or mammary retraction.

The lymph nodes were free. The contralateral breast and the rest of the somatic examination were normal. Mammography was suggestive of malignancy, showing a dense opacity with stellate outlines mimicking

a breast carcinoma. The breast biopsy showed giant-cellular granulomas centred on suppurative caseous necrosis on a polymorphous inflammatory background.

The patient underwent initial tumorectomy on suspicion of associated breast cancer and was then referred to the tuberculosis diagnosis and treatment centre for anti-tuberculosis treatment following

histological confirmation of the diagnosis of breast tuberculosis. The patient was put on anti-tuberculosis treatment (Rifampicin, Isoniazid, Pyrazinamide) for 6 months.

No other tuberculous sites were identified. After 1 year, the patient is still doing well.

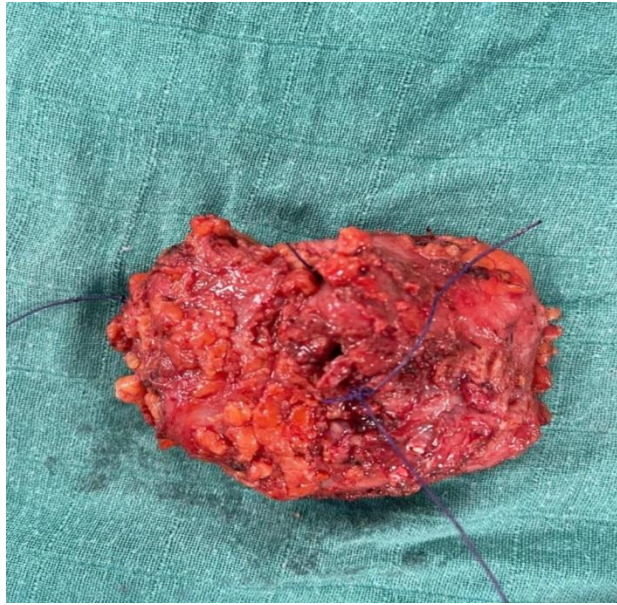


Fig 1: Nodular breast tuberculosis surgery specimen

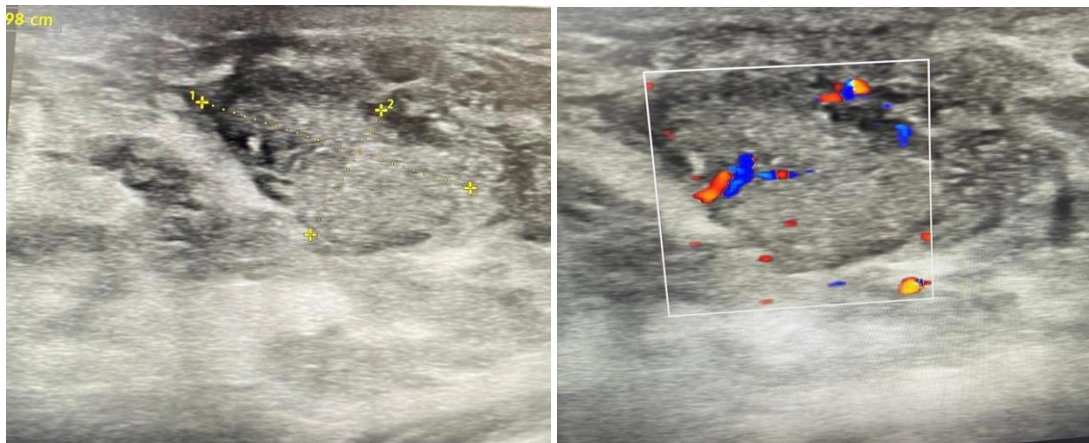


Fig 2: Ultrasound images of nodular tuberculosis of the breast

DISCUSSION

Mammary tuberculosis is a very rare form of tuberculosis. Its incidence varies from 0.025 to 4.5% of all breast diseases treated surgically [6]. Its frequency varies from 0.06% to 0.1% of tuberculosis cases [4, 5]. The rarity of this clinical form may be explained by the fact that breast tissue does not appear to be conducive to the survival and multiplication of the tubercle bacillus [9].

It is most commonly seen in countries where tuberculosis infection is endemic [6, 8, 10]. It mainly

affects women who are sexually active, and 83% to 95% of these women are aged between 20 and 40 [8, 10].

Mammary tuberculosis may be primary, where the breast is the only organ affected, or secondary, where other sites are found [6, 10].

Pregnancy, lactation and multiparity are risk factors [11]. There are various pathway of contamination [5]: the lymphatic pathway, where an axillary adenopathy is often found; the haematogenous pathway, as part of a tuberculosis millennium; spread by contiguity from a neighbouring site; the ductal pathway: dilation of

the galactophoric ducts in women during pregnancy or breast-feeding increases the sensitivity of these ducts to bacillus infection; The direct pathway: exceptional, this is the penetration of Koch's bacillus into the breast following a cutaneous or galactophoric abrasion. In the case of our patient, the infection was primary with no other locations found.

Clinically, mammary tuberculosis is characterised by the absence of specific clinical signs, and the symptomatology may simulate a large number of benign or malignant breast diseases.

The main clinical forms are:

- The deep nodular/glandular form: this manifests as a hard, poorly defined nodule that is hardly mobile, painless and may or may not be accompanied by axillary adenopathy, suggesting a malignant tumour. This form manifests as premenstrual mastodynia. Clinical examination reveals a swelling, usually a single deep swelling, preferably in the upper external quadrant [6]. No adhesions, either superficial or deep, were found. Mammography reveals a dense lesion with poorly defined contours, simulating a breast carcinoma and corresponding histologically to tuberculous lobulitis [8, 10].
- Superficial mammary tuberculosis: corresponds to tuberculous galactophoritis without involvement of the lobule or peri-lobular tissue [10]. It forms a poorly limited nodule around the nipple, rapidly causing retraction of the nipple. The skin opposite the nodule becomes thinner and a small fistulous ulceration develops, from which a squinty liquid emerges. The evolution of this fistula is cyclical, drying up spontaneously then reappearing at the time of menstruation [10]. Histologically, this tuberculous galactophoritis may be encysted with dilated ducts with a caseous-filled lumen, or vegetated with intra-canal vegetations [10]. Mammography suggests inflammatory carcinoma [8].
- The advanced form is seen mainly in deep, neglected forms. This form can take two forms: a sclerotic form, which is more frequent in elderly women [8]; the second form is a cold abscess, with extensive caseous necrosis throughout the gland, giving rise to a tubercular fungus. In our case, it was a deep glandular tuberculosis.

The sclerotic form: this is more common in the over-aged, with the presence of an indurated, painful mass that rarely progresses to suppuration - clinical factors that suggest tuberculosis [14].

Radiologically, there are no specific mammographic signs of mammary tuberculosis. Instead,

mammography shows suspicious images as found in the forms described above. Given this lack of specificity, mammography can only provide an element of diagnostic orientation.

On ultrasound, breast tuberculosis often appears as a hypoechoic, heterogeneous image, well or poorly limited, with minimal posterior enhancement [12], or as a heterogeneous, well-limited hypoechoic image with posterior enhancement and some calcifications. These two aspects pose a problem of differential diagnosis with breast cancer and with ancient and remodelled adenofibromas respectively. Combining mammography and breast ultrasound increases the sensitivity and specificity of these two examinations [5].

The diagnosis of certitude is based on histological examination [13] with the identification of epithelioid and giganto-cellular granulomas with caseous necrosis, as in the case of our patient. However, it should be noted that epithelioid-giganto-cellular granulomas without caseous necrosis can be perfectly well observed in the cancer stroma [10]. The biopsy specimen obtained after fine needle aspiration gives an accurate diagnosis of between 12 and 73%, depending on the skill of the aspirator and the cytologist. It should be noted that the same histological appearance may be found in other granulomatous diseases of the breast, such as atypical mycobacteriosis, cryptococcosis, blastomycosis, histoplasmosis, sarcoidosis and leprosy [15, 16].

The tuberculin skin test is usually positive in endemic areas; this test is sensitive but not very specific, as a negative result does not rule out the diagnosis.

Conventional medical treatment with a combination of anti-tuberculosis drugs is the mainstay of treatment. The World Health Organisation recommends an eight-month course of treatment for new cases, with a two-month intensive phase combining four anti-tuberculosis drugs (Rifampicin, Isoniazid, Pyrazinamide and Ethambutol) followed by a six-month continuation phase combining two anti-tuberculosis drugs (Isoniazid and Ethambutol).

Surgical treatment is indicated for diagnostic purposes or as an addition to drug treatment, and consists of simple puncture, incision, drainage or curettage of fistulas. A tumorectomy or even a mastectomy may be indicated in the case of extensive painful or ulcerated swelling affecting the entire breast, with little or no response to medical treatment with anti-tuberculosis drugs. Treatment compliance must be rigorous in order to prevent recurrence and the development of resistance to anti-tuberculosis drugs [17].

As in the case of our patient, in which tumorectomy was performed for diagnostic purposes and to rule out the possibility of breast cancer, combined with anti-tuberculosis treatment after histological

confirmation of the diagnosis of breast tuberculosis. The prognosis for breast tuberculosis, treated and managed correctly, is excellent [8].

CONCLUSION

Mammary tuberculosis is a rare localization of extra-pulmonary TBK, posing a problem of diagnosis in particular with breast cancer, which is why histological, clinical and radiological confrontation is so essential for appropriate management.

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