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Case Report

The Interest of the Extemporaneous Examination in the Diagnosis of Breast Tuberculosis

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Abstract

Tuberculosis is an infectious disease caused by bacteria belonging to mycobacterium family (KOCH bacillus). It often affects low socioeconomic populations, immunosuppressed individuals, and elderly people. The lung remains the most frequent localization in endemic countries followed by visceral involvement especially digestive one. Our patient is 46 years old with no particular history who presented a mammary nodule measuring 4.5 cm located at the level of the supero-internal quadrant with no inflammatory sign, with stable general conditions. The mammogram shows a poorly circumscribed and dense lesion without calcifications with disorganization of the mammary architecture and surface thickening of the skin. A decision of an extemporaneous examination was made by the surgical team with an initial diagnosis of breast carcinoma. A diagnosis of granulomatous mastitis has been made by our team while waiting confirmation of the specificity of the inflammatory reaction after paraffin inclusion. Histological examination after formalin fixation and paraffin inclusion confirms the tuberculous origin of the lesion. Breast tuberculosis is a rare disease, even in endemic countries. Its incidence is low both as tuberculous localization (0.06 to 0.1%) and breast disease (0.025 to 4.5%). The disease evolves in an insidious way and is rarely accompanied by general signs.

Keywords: Breast, Tuberculosis, Extemporaneous, surgey.

INTRODUCTION

Tuberculosis is an infectious disease caused by bacteria belonging to mycobacterium family (KOCH bacillus). It often affects low socioeconomic populations, immunosuppressed individuals, and elderly people. The lung remains the most frequent localization in endemic countries followed by visceral involvement especially digestive one.

The mammary gland is a rare or even an exceptional localization [1], and it causes a problem of differential diagnosis with benign and malignant breast tumors with a clinical and radiological resemblance [1].

Case Presentation

Our patient is 46 years old with no particular history who presented a mammary nodule measuring 4.5 cm located at the level of the supero-internal quadrant with no inflammatory sign, with stable general conditions.

The clinical examination shows on palpation a nodule of hard consistency, mobile in deep and superficial plane, painful with presence of lymphadenopathies in the axillary region.

Ultrasound shows a poorly defined, heterogeneous and hyperechogenic lesion without posterior attenuation.

The mammogram shows a poorly circumscribed and dense lesion without calcifications with disorganization of the mammary architecture and a skin thickening in the surface.

A decision of an extemporaneous examination was made by the surgical team with an initial diagnosis of breast carcinoma.

We have received in our structure a fragment of 1.3x 1.2 cm of yellow-white color and firm consistency whose extemporaneous examination showed a mammary parenchyma with nodular formations centered by a Caseiform necrosis and surrounded by a Mononuclear inflammatory infiltrate (Figure 1 & 2). A diagnosis of granulomatous mastitis

has been made by our team waiting confirmation of the specificity of the inflammatory reaction after paraffin inclusion. The surgery team decided to cancel the lumpectomy waiting for the final result.

Histological examination after formalin fixation and paraffin inclusion revealed a mammary parenchyma with a granulomatous epithelioid and follicular mammary cell inflammatory reaction centered by caseous necrosis (Figure 3 & 4). Ziehl's specific staining was negative.

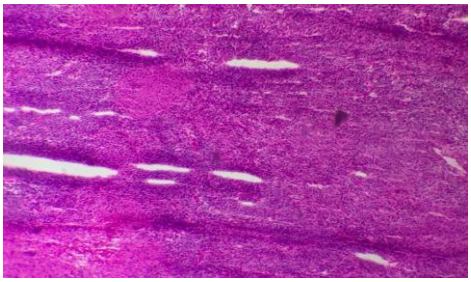

Fig-1: Histological image of the extemporaneous showing granulomatous follicles HE [Gx 10]

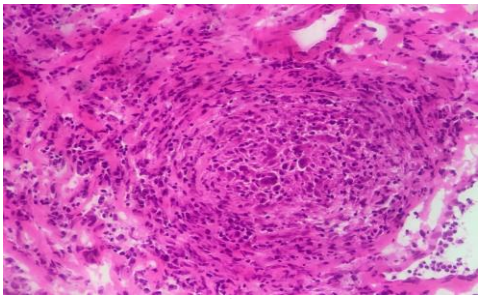

Fig-2: Histological image of the extemporaneous showing granulomatous follicles HE [Gx 20]

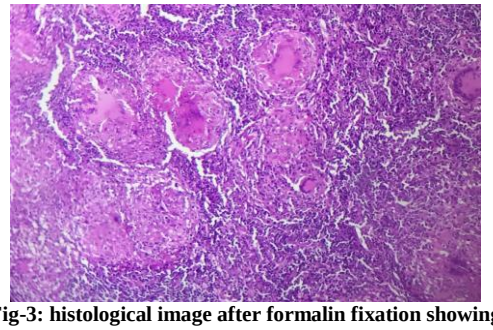

Fig-3: histological image after formalin fixation showing tuberculoid granulomas HE [Gx 10]

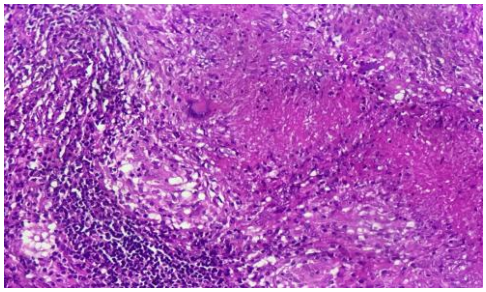

Fig-4: Histological image of the extemporaneous showing an epithelioid and gigantocellular granuloma centered by caseous necrosis HE [Gx 20]

DISCUSSION

Breast tuberculosis was described by Sir Astley Cooper in 1829 for the first time in a young woman who had swelling in the breast [1-2]. Before that date, the breast was considered as an immunized organ against tuberculosis [3, 4].

It was in 1882 that Koch [5] has discovered the bacillus responsible for the disease, which today bears its name [5].

900 cases of breast tuberculosis have been reported in the literature [2, 3]. Breast involvement ranges from 0.06 to 0.1% of all tuberculosis sites according to series.

Breast tuberculosis is a rare disease, even in endemic countries, and raises a problem of clinical and radiological diagnosis, especially with breast cancer, hence the interest of a histological confrontation, and interest of the extemporaneous examination.

The histological proof of breast tuberculosis was discovered by Richet in 1880 and bacteriological proof by Ohnaker in 1883 [6, 7]. Breast tuberculosis is common in young women during genital activity periods, especially between 20 and 40 (70-80%), and remains rare in menopausal women [8].

Before the advent of antibacillary treatments, breast tuberculosis was treated only by surgical excision [9].

Breast tuberculosis is influenced by the physiological activity of the breast. This explains its high frequency in women in genital activity and its rarity before puberty and after menopause [15].

Multiparity seems to play a role in the determinism of the disease; in fact, breast tuberculosis is more common in multiparous women [16]. Pregnancy and breastfeeding are also contributing factors. Indeed, the vascular wealth of the gland at these moments of life explains its high susceptibility to tuberculosis [17].

There are two forms of breast tuberculosis, either as an isolated lesion or associated with other bacillary lesions (ganglionic, osteoarticular or genitourinary). We can then distinguish two types:

Primary Breast Tuberculosis

It is a form where tuberculosis initially sits at the level of the mammary gland. It is more common and represents 60% of cases. This form is disputed by some authors who think that other tuberculous foci are mainly responsible [18, 19].

Secondary Breast Tuberculosis

This form is less frequent than the primitive one and follows the previous involvement of an organ other than the breast [10].

The bacillary extension can be done in four ways:

- The lymphatic route is the most common way of extension, whereby KB is spread from mediastinal, cervical, supraclavicular or axillary adenopathies [12]. This hypothesis is based on the possibility of association of axillary adenopathies and tuberculous mastitis;
- The haematogenous route is rarely described [13]. In fact, the location of the lesions is not determined by the position of the vessels, but rather by the structure of the mammary gland where tuberculosis has a lobular and ductal distribution as in the lung [14].

Penetration from the nipple through the milk ducts is a possible route of contamination. The expansion of the milk ducts in women during pregnancy and lactation, as well as the locoregional circulatory changes that occur during this period, would increase the susceptibility of these channels to infections, particularly that of KB [15];

- The direct extension from the neighboring organs is done by contiguity, step by step, from a close caseous focus: cutaneous, pleural or bony [14].

Breast tuberculosis is a mastitis whose begining is insidious and nonspecific. The consultation period remains variable, between a few weeks to several years, testifying to the chronicity of this disease [11].

The symptomatology can simulate a large number of benign or malignant affections of the breast. General signs are rare, and evolution is chronic.

The history of pulmonary tuberculosis is often found in the literature review; sometimes it is an extrarespiratory tuberculous site [10]; the concept of tuberculous contusion rarely exists [6].

In the vast majority of cases, breast tuberculosis is unilateral [12]; Bilaterality occurs only in 3% of cases according to Salem *et al*., [10].

Anatomopathological examination performed on biopsies or on lumpectomy specimens remains the decisive argument for breast tuberculosis, showing epitheloid follicles and giant Langhans cells with caseous necrosis, but the contribution of the extemporaneous keeps all its value in the controversial cases with suspicion of breast cancer.

The presence of tuberculoid lesion with incomplete or sketched follicle could correspond to other disorders, such as leprosy or breast sarcoidosis [10]. In the case of our patient, the surgical procedure had as objective a surgical excision of an eventual cancer.

The finding of granulomatous lesions with epithelio-gigantocellular follicles, even centrered by caseum, is not pathognomonic of tuberculosis. In fact, some granulomatous mastitis with non-tuberculous caseous necrosis, such as cryptococcosis, plasmocytosis, tularemia, blastomycosis, histoplasmosis, and the giant-cell cellular reaction on foreign bodies are thus presented.

In these cases, the bacteriological study is necessary. In our case and as we are in a country where tubercolosis is a public health problem, the treatment is set up.

The bacteriological study is a formal argument for the diagnosis. It allows the detection, by the direct examination and the culture of acid-fast bacilli in the product of a cytopuncture, a biopsy or in the secretions, of a mammary fistula [11]. It allows the detection, by the direct examination and the culture of acid-fast bacilli in the product of a cytopuncture, a biopsy or in the secretions, of a mammary fistula [11].

The differential diagnosis of breast tuberculosis is made on the clinical and radiological aspects of breast cancer and that of benign mastopathies, in particular the fibroadenoma and the phyllode tumor [3].

CONCLUSION

Breast tuberculosis is a rare disease, even in endemic countries. Its incidence is low both as tuberculous localization (0.06 to 0.1%) and breast disease (0.025 to 4.5%).The disease evolves in an insidious way and is rarely accompanied by general signs.

The positive diagnosis is based on a set of arguments collected from the tuberculosis historys and the extra-mammary tuberculosis localization. However, it is the anatomopathological study of the lesion, either through the extemporaneous or after formalin fixation, which often makes it possible to confirm the diagnosis by highlighting a granulomatous mastitis with central caseous necrosis and bacteriological isolation of the KB. Treatment with anti-bacillary chemotherapy is often sufficient to achieve cure except in the case of gland destruction where surgery is needed. Breast tuberculosis is a disease of very good prognosis, provided that the treatment is well adapted and followed of intestinal infestations.

Ethics Approval and Consent to Participate

This work has respected all the rools of medical ethics and has been elaborated by all the authors.

Availability of Material and Data

All data is available in the Military hospital Mohammed V, Rabat, Morocco.

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Consent to Publish

As the main author and the names of all authors I allow you to publish this article in your review

Competing Interests

The authors do not declare any conflict of interest.

Author's Contributions

All the authors contributed to the writing of this work.

REFERENCES

1. Abboud, P., Bancheri, F., Bajolet-Laudinat, O., Beguinot, I., Wahl, P., & Quereux, C. (1997). Tuberculose mammaire: A propos d'un cas à forme inflammatoire diffuse. *Journal de gynécologie obstétrique et biologie de la reproduction*, *26*(8), 822-824.
2. Sakr, A. A., Fawzy, R. K., Fadaly, G., & Baky, M. A. (2004). Mammographic and sonographic features of tuberculous mastitis. *European journal of radiology*, *51*(1), 54-60.
3. Hassouna, J. B., Gamoudi, A., Bouzaiene, H., Dhiab, T., Khomsi, F., Chargui, R., ... & Boussen, H. (2005). Tuberculose mammaire: étude rétrospective de 65 cas. *Gynécologie obstétrique & fertilité*, *33*(11), 870-876.
4. Chellaoui, M., Taleb, A., Chat, L., Achaabane, F., Alami, D., Najid, A., & Benamour-Ammar, H. (2002). Tuberculose mammaire: à propos d'un cas. *Journal de radiologie*, *83*(6-C1), 742-744.
5. Daali, M., Hssaida, R., & Hda, A. (2001). La tuberculose primitive du sein. *La Presse médicale*, *30*(9), 431-433.
6. Ducroz, B., Nael, L. M., Gautier, G., Monreal, J. M., Marquet, M., & Cloup, N. (1992). Tuberculose mammaire bilatérale: un cas: revue de la littérature. *Journal de gynécologie obstétrique et biologie de la reproduction*, *21*(5), 484-488.
7. Fellah, L., Leconte, I., Weynand, B., Donnez, J., & Berlière, M. (2006). Breast tuberculosis imaging. *Fertility and sterility*, *86*(2), 460-461.
8. Gilbert, A. I., McGough, E. C., & Farrell, J. J. (1962). Tuberculosis of the breast. *American Journal Surgery*, 103: 424-427.
9. Salem, A., Bennaceur, R., Driss, M., Mehiri, S., Mrad, K., Rajhi, H., ... & Mnif, N. (2008). Imagerie des mastites granulomateuses idiopathiques. *Imagerie de la Femme*, *18*(1), 46-54.
10. Salem, A., Mnif, N., Karray, M., Kribi, L., Ellouze, T., & Hamza, R. (2004). Double localisation tuberculeuse mammaire et rachidienne: à propos d'un cas. *Journal de gynécologie obstétrique et biologie de la reproduction*, *33*(2), 148-150.
11. Seffert, P. (1978). La tuberculose mammaire. *Journal Gynecol Obstet Biol Reprod*, 8: 54-5.
12. El Hanchi, Z., Kharbach, A., Berrada, R., Bisbis, W., Barhmi, R., Khabouze, S., ... & CHAOUI, A. (1998). Tuberculose mammaire: à propos de huit cas. *Revue française de gynécologie et d'obstétrique*, *93*(5), 331-334.
13. Zandrino, F., Monetti, F., & Gandolfo, N. (2000). Primary tuberculosis of the breast: a case report. *Acta Radiologica*, *41*(1), 61-63.
14. Manjubala, P. (1999). Tuberculosis of the breast. *Ind J Radiol Imag*, *9*, 127-132.
15. Khaiz, D., Lakhloufi, A., Chehab, F., Abi, F., & Bouzidi, A. (1993). Tuberculose mammaire: A propos de deux cas. *La Semaine des hôpitaux de Paris*, *69*(15), 454-458.
16. Kakkar, S., Kapila, K., Singh, M. K., & Verma, K. (2000). Tuberculosis of the breast. A cytomorphologic study. *Acta cytologica*, *44*(3), 292-296.
17. Shinde, S. R., Chandawarkar, R. Y., & Deshmukh, S. P. (1995). Tuberculosis of the breast masquerading as carcinoma: a study of 100 patients. *World journal of surgery*, *19*(3), 379-381.
18. Khaled, A., Saadi, A., Jaziri, M., BEN ROMDHANE, K., Boussen, H., Khattech, R., ... & GAMOUDI, A. (1992). La tuberculose mammaire: aspects radiocliniques. A propos de 70 cas. *Revue d'imagerie médicale*, *4*(11), 755-758.
19. Banerjee, S. N., Ananthakrishnan, N., Mehta, R. B., & Parkash, S. (1987). Tuberculous mastitis: a continuing problem. *World journal of surgery*, *11*(1), 105-108.