

Breast location of tuberculosis: A systematic review

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Summary

Breast tuberculosis is a rare localization of extrapulmonary tuberculosis. We report the first case observed in our daily activities to show the difficulties in the diagnosis and the good evolution in the treatment. In spite of the fact that it

is rare, breast tuberculosis should not be ignored, especially in a country with high tuberculosis endemicity.

Keywords: tuberculosis, breast, histology, antituberculosis drugs

Introduction

Breast tuberculosis is a rare localization of extra-pulmonary form of tuberculosis even in endemic countries. It represents 0.06 to 0.1% of all locations.^{1,2} It was mostly primitive and affects women during genital period. The first case was described by Cooper in 1829 as a "cold tumor".³ As a result, this form of tuberculosis is often mistaken as a cancerous lesion and then poses a differential diagnosis problem with other breast pathologies whose management is completely different. The basics of the current treatment are based on the medical treatment with anti-tuberculosis drugs and sometimes with surgery. We report this clinical observation in order to raise the clinical aspect, the diagnostic and therapeutic difficulties in the context of our undeveloped country.

Observation

Ms. D M, 43 years old, is the 4th gestation and second parturition. She has been correctly vaccinated against tuberculosis during her childhood and present no history of tuberculous contact. She consulted for a painful swelling of the left axillary fossa associated with a painless left breast mass.

The clinical examination revealed a weight loss of more than 10% of body weight, a nodule of the left superior quadrant of the left breast measuring 3 cm of largest axis, irregular and mobile with the presence of a non-inflammatory firm mobile sensitive ipsilateral axillary lymph node recalling a malignant pathology. Mammography and ultrasound guided microbiopsy were requested but not performed by the patient. The evolution is made up with the occurrence, two months later, of a cutaneous fistula of the breast nodule and adenopathy of the left lateral region of the neck which bring her for emergency consultation. Furthermore, there was a lipoma in front of the left pectoral muscle of about 4 cm of largest axis (Figure 1 & 2).

After microbiopsy, the histological examination concluded at a caseum follicular tuberculous mastitis with the presence of a giant epithelial cells granuloma, sometimes centered on caseous necrosis. The granuloma consisted of epithelioid cells, giant Langhans cells, lymphocytes and plasma cells as shown in Figure 3.



Figure 1 1- axillary lymph node, 2- breast fistula.

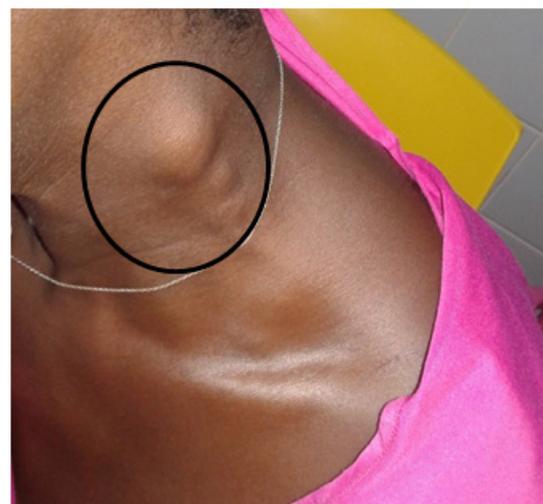


Figure 2 Cervical lymph nodes.

After a standard before treatment work-up, the patient was referred to the Diagnosis and Treatment Center for antituberculosis treatment consisting of 150 mg rifampicin + 75 mg isoniazid + 400 mg pyrazinamide and 275 mg ethambutol for 2 months, then 150 mg rifampicin and 75 mg isoniazid for 4 months. The changes after six (6) months were made up with a recovery of weight, a disappearance of the breast nodule, a decreased size of the axillary and cervical lymph nodes.

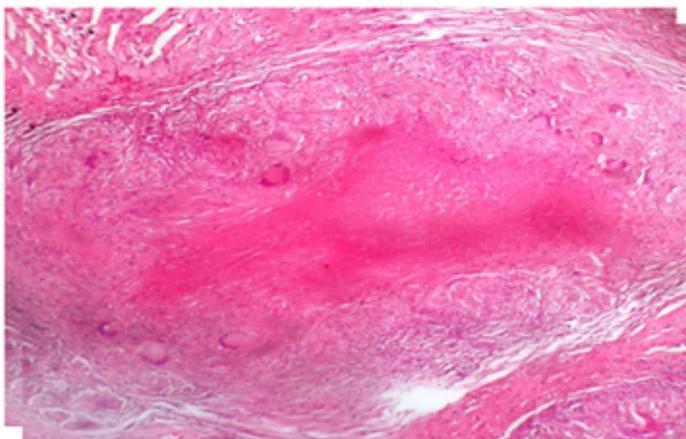


Figure 3 (HE X 20) : epithelial giant cell granuloma centered by a structureless necrosis.

Due to the persistence of the lymph nodes at the 6th month, the treatment was prolonged for 3 months combining 150 mg of rifampicin and 75 mg of isoniazid. The clinical healing was completed after 9 months of treatment before the disappearance of all clinical signs and a normal mammography and ultrasound results.

Discussion

Breast tuberculosis is a very rare localization of tuberculosis. It comes in the last row of locations.³⁻⁶ Its frequency varies from 0.06% to 0.1% of all tuberculosis sites.^{1,2,7,8} and according to geographical regions.^{7,9,10} Its incidence varies between 0.025% and 4.5% of all breast tumoral diseases.^{7,11} The rarity of this clinical form could be explained by the fact that breast tissue does not seem to be conducive to the survival and multiplication of tuberculosis bacilli.^{3,8} Since the first description of breast tuberculosis by Ashley Cooper in 1829 who equated it with a cold breast tumor. Nearly 900 cases have been reported in the literature.^{3,7,12} The Asian continent has the highest number of published cases (45.2%), followed by Black Africa (27.4%), North Africa (17.2%), Europe (16.2%) and finally America (4%).^{3,5} Breast tuberculosis is mostly observed in women during genital activity period, between 20 and 50 years.^{9,10} The risk factors mentioned are multiparity, breastfeeding, pregnancy, breast trauma and chronic mastitis.⁷ According to the mode of contamination, there are two forms of breast tuberculosis^{7,10,13}: the primitive form and the secondary form. For primitive breast tuberculosis, contamination is done either by direct inoculation of Koch's bacillus through the galactophoric ducts or skin lesion, favored by breastfeeding and pregnancy. Regarding secondary breast tuberculosis, the breast is contaminated either by hematogenous or lymphatic system because of the presence of axillary adenopathy, observed by the authors in about 75% of cases.^{12,14} This was the same with our observation.

In clinical terms, breast tuberculosis is polymorphic, characterized by the absence of specific signs.^{3,8,12,15} Clinical symptomatology can

simulate many benign or malignant breast conditions. However, breast fistulation or associated axillary lymphadenopathy should be highly suggestive, especially in a geographic area where tuberculosis is endemic.¹¹ In the case described, the patient had secondary breast fistulation associated with axillary and cervical lymphadenopathy.

Three macroscopic aspects are generally encountered in the literature.⁹: nodular, diffuse and scleral. Regarding the nodular form it is manifested by an indurated, irregular, not very mobile, painless breast nodule, with or without axillary lymphadenopathy very suggestive of a malignant tumor. The diffuse form is less frequent. It involves the entire breast that is painful and inflammatory, with inflammatory axillary adenopathy. Cutaneous fistulation is frequent here. As for the sclerosing form, it is rather the prerogative of the elderly and is in the form of an indurated and painful mass rarely leading to suppuration.

Regarding the paraclinical assessment, several examinations have been used to refine the diagnosis. Among these additional examinations, the fine aspiration needle can guide the diagnosis when it detects an amicrobial pus. The histology which is a primordial and indispensable examination, but insufficient on its own to confirm the diagnosis. Indeed, SYMMERS, out of 44 granulomatous mastitis with caseous necrosis, had identified 24 non-tuberculous diseases (cryptococcosis, plasmocytosis, tularemia, blastomycosis, histoplasmosis, giant cell reaction on foreign bodies).^{11,14} Regarding bacteriology, it can contribute to the diagnosis in 25% according to the data of the literature.

The diagnosis of confirmation is mainly carried by the demonstration of acid-fast bacilli either by direct examination or by culturing the specimen. In our context, because of the unavailability of laboratories and the limited financial means of the populations, the diagnostic errors are numerous thus delaying the diagnosis. Patients most often consult with complications such as fistulation as reported in this observation. Moreover, mammographic examination can help for diagnosis by showing nonspecific signs such as dense opacity with fuzzy contours (ACR4) with cutaneous thickness, sometimes microcalcifications.^{15,16} It can also show signs of breast tuberculosis such as the most common nodular form, diffuse shape, and sclerosing form.¹⁷ This examination could not be realized the first time by our patient. Breast ultrasound can also give an orientation by showing a heterogeneous poorly limited hypoechoic image with minimal posterior reinforcement. The confirmation diagnosis remains the histology after performing microbiopsy, complete or partial surgical excision, or by coring of the lesion, or by punching or curettage of the fistulous path. Histology shows, in 95% of cases, epithelial and giant cells granuloma with central caseous necrosis, very suggestive of a tuberculous lesion.^{17,18,20,21}

Treatment is essentially medical. Antibacterial drugs, when well administered, for an enough duration, allows a favorable evolution.^{1,17,20} in most cases, as reported in the observation. This treatment must be instituted after bacteriological or histological proof. Generally anti-tuberculosis drugs include isoniazid 5 mg / kg, rifampicin 10 mg / kg, pyrazinamide 30 mg / kg, ethambutol 20 mg / kg and streptomycin. The treatment regimen includes the combination of two active drugs and should be extended for 6 to 18 months depending on the clinical setting. The schedule of drug intake requires a single daily dose in the morning with an empty stomach daily 6 days out of 7.^{2,13,21} In addition to medical treatment, surgical indications exist and consist either of a biopsy (histology), or a drainage of pus collections, an excision of necrotic tissue or a lumpectomy.¹ This surgery can be performed in case of failure to medical treatment.¹⁷

The control of the patient's compliance as well as the monitoring of treatment efficiency and tolerance are essential in all cases.²

¹³ Evolution under well-conducted treatment is usually favorable. Prevention remains very important and calls for vaccination with BCG, treatment of all diagnosed cases and improvement of living conditions.^{17,20,21} However, it is necessary to consider this diagnosis in front of the macroscopic aspect and to ask for a biopsy for histological confirmation.

Conclusion

Although rare, breast tuberculosis should not be ignored, especially in a country with high tuberculous endemicity. The histology after biopsy makes it possible to confirm the diagnosis. The prognosis is good under anti-tuberculosis treatment.

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None.

Conflicts of interest

The authors declared no conflict of interest with this communication.

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