



Journal home page: <http://www.journalijar.com>

INTERNATIONAL JOURNAL  
OF INNOVATIVE AND APPLIED RESEARCH

## RESEARCH ARTICLE

Article DOI: 10.58538/IJAR/2118

DOI URL: <http://dx.doi.org/10.58538/IJAR/2118>

### ABOUT 10 DIAGNOSIS OF PRIMARY BREAST TUBERCULOSIS: CASE SERIES

KHALID GUELZIM, SAAD BENALI, ABDELHAMID BENLGHAZI, FATIMA EL MANGOUB,  
MOULAY EL MEHDI EL HASSANI, JAOUAD KOUACH

Gynecology and Obstetrics Department, Military Hospital Mohamed V of Rabat, Mohamed V University of Rabat

#### Manuscript Info

#### Manuscript History

Received: 11 December 2024

Final Accepted: 15 January 2025

Published: January 2025

#### Keywords:

Breast Tuberculosis, Diagnosis,  
Antitubercular, Case Series

#### Abstract

Breast tuberculosis is an extremely rare pathology, it comes at the last rank in the list of organs that can be affected by tuberculosis. Its incidence is considerable especially since recrudescence of HIV infection. We report in the present work a retrospective study relating to 10 cases of women with breast tuberculosis collected in department of gynecology and obstetrics in Military Hospital of Instruction Mohamed V of Rabat-MOROCCO.

\*Corresponding Author:- SAAD BENALI, Gynecology and Obstetrics Department, Military Hospital Mohamed V of Rabat, Mohamed V University of Rabat.

#### Introduction:-

Breast tuberculosis comes at the last rank in the list of organs that can be affected by tuberculosis. It represents 0,06%. It affects young women in their genitally active period [1]. However, there is a major issue of the differential diagnosis with other mammary pathologies, either benign or malignant, including breast cancer due to clinical and radiological similarities [2]. Treatment is actually based on antitubercular chemotherapy, occasionally associated to surgery.

We report 10 cases of primary breast tuberculosis, brought together in our service. Through the analysis of our results and literature data we focus on clinical, radiological and therapeutic characteristics of breast tuberculosis. We insist on the difficulties of differential diagnosis with other breast diseases especially breast cancer.

#### Materials and Methods:-

It's a retrospective study spread over a duration of 7 years between January 1st 2010 and Decembre 31st 2016, including 10 patients with breast tuberculosis and taken care in our training (Military Hospital of Instruction Mohamed V, Rabat, Morocco).

#### Outcomes

##### Epidemiological data

The average age of our patients was about 42,8 years old with extremes from 21 to 60 years. The age group most was between 40 and 50 years old with a frequency of 40 and 80% of our patients in their genitally active period.

4 patients were multiparous, followed by nulliparous 30% then pauciparous 20% and lastly primiparous 10%.

The notion of tuberculosis contagium was noted just with two patients.

#### Clinical data

The average deadline of consultation in our series was about 4 months and half ranging from 2 to 8 months. Clinical symptoms reported from our patients were about breast node in 50% of cases, breast abscess in 50% of cases (Figure 1), fistula in 40% of cases, axillary nodes in 30% of cases, mastalgia in 20% of cases and nipple discharge in one case.

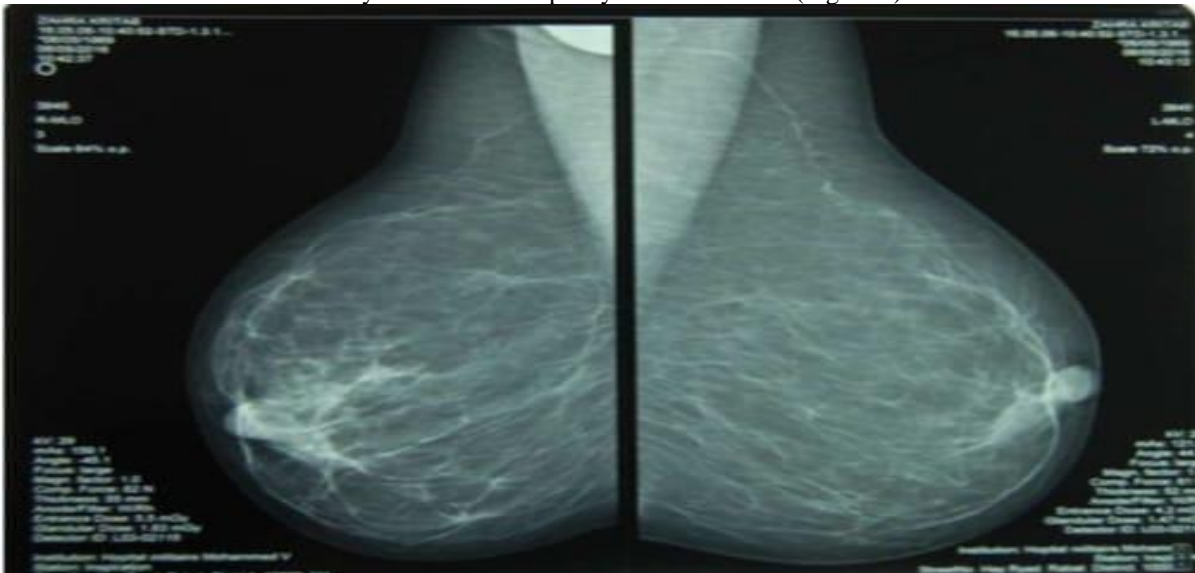


**Figure 1:-** Clinical image showing bilateral breast abscess.

Breast tuberculosis was unilateral in 90% of cases with right predominance (70%). Whereas one patient has bilateral disease. Lesions were localized on external quadrant in 50% of cases, 20% in the internal one and localization in all the breast at 40% of cases.

#### Paraclinical data

Mammography was done in 60% of cases. several images were observed but no specific radiological sign was evocative of tuberculosis. Principal mammographic aspects were : additional opacities in 30% of cases, thickening of the skin in 30% of cases and badly limited stellar opacity in 10% of cases (Figure 2)



**Figure 2:-** Mammographic image showing stellar opacity in the right breast.

Breast ultrasound was done at eight patients and different aspects were about hypoechogenic and heterogenous images in 60% of cases, thickening of the skin in 40% of cases, breast node in 20% of cases and liquid formation in 20% of cases.

Breast MRI was done in two cases and showed in the upper-inner quadrant of the right breast, a lesion with heterogenous signal and disseminated lesion in the inferior-inner quadrant of right breast, taking the contrast. (BIRADS V) (Figure 3) whereas, at the second patient, the MRI showed heterogenous matricial enhancement with dilatation of galactophoric canals. (BIRADS III)



**Figure 3:-** Breast MRI image showing heterogenous lesion classified BIRADS V.

#### **Chest X-ray was normal in all cases.**

Histological examination showed in all cases granulomatous epithelial-giganto-cellular mastitis with caseous necrosis in 80% of cases and without caseous necrosis in 20% of cases.

The Quantiferon-TB came up positive at two patients.

The bacteriological analysis of pus showed an important cellular reaction along with positive culture in one case.

#### **Therapy**

The therapeutic management of our patients consists of two components :

- medical treatment with anti-tuberculosis antibiotics following the protocol of Moroccan national tuberculosis program.
- Surgical treatment including : draining abscesses (30%), exeresis of a residual node (10%), mastectomy of cleanliness(10%).

#### **Evolution**

Evolution was favorable in all cases with a decline of 10 to 60 months.

#### **Discussion:-**

##### **Epidemiology**

Mammary tuberculosis is an extremely rare pathology. It represents between 0,025 to 4,5% of breast pathologies. Its low frequency could be explained by the nature of the mammary tissue, not propitious enough for the proliferation of the tubercular bacilli [1,3].

Breast tuberculosis is mostly encountered in tuberculosis-endemic countries. For KHAIZ in a study about 215 cases, Asia has the largest percentage with 45,2% of reported cases, followed by 27,5% in Black Africa, 17,2% in North Africa, 16,2% in Europe and 4% in America [4,5].

Breast tuberculosis affects young women in their genitally active period from 20 to 40 years old [6].

In our study : the middle age was 42,8 years old, 7 patients from 10 had a middle age between 30-50 years old and 2 patients from 10 had more than 50 years old.

Breast tuberculosis is influenced by physiological activity of the breast, so that explains its high frequency among women in their genitally active period and its rarity before puberty and after menopause [7].

Multiparity appears to be important for determinism of the disease, indeed, breast tuberculosis is more frequent at multiparous women [8].

Pregnancy and breastfeeding are also risk factors, indeed, the vascular wealth of gland in these moments of life explains its big susceptibility to tuberculosis [9].

In our study : 8 patients were in genital period activity, and 4 of them were multiparous and 3 nulliparous, 2 patients were menopausal.

#### **Transmission routes**

Breast Tuberculosis is considered primary in the absence of any other localizations, which is the most frequent case. It is considered secondary if the infection has started in another localization (lymph nodes, intra-thoracic, osteoarticular, urogenital).

There are five ways of extension :

- Lymphatic system : it's the most frequent one, it spreads by antegrade or retrograde extensions through the lymphatic vessels from intra-thoracic, cervical, supraclavicular or axillary lymph nodes [11].
- Hematogenous system : it's rarely reported, indeed, the location of the hurts is not determined by the position of vessels but by the lobular or duct structure of the breast gland [12].
- Extension by contiguity : done by adjacent foci, as pleural, costal, or sternal lesions. Sometimes it can be direct extension from the lung [13].
- Penetration from nipple through galactophorous ducts : especially during pregnancy and breast-feeding when dilated ducts are susceptible to infection [14,15,16].

In our study, all the patients had primary breast tuberculosis because no one of them had a personal history of lung tuberculosis or other localization.

#### **Clinical diagnosis**

The diagnosis is always difficult because of similarities with several affections especially with old women where breast cancer is the essential preoccupation and also because of the lack of specificity of clinical and radiological signs. Only histopathological examination gives certain diagnosis.

However, some clinical criterias are useful to let us think about tuberculosis such as [19] :

Pathological history of lung tuberculosis is often reported in litterature, it can be sometimes extra-respiratory tuberculous localization [20] ; notion of tuberculous contagion is very rare [21].

In our study, there is no pathological history of lung tuberculosis but tuberculous contagion was reported in two cases.

The delay of consultation is frequently found, indeed, patients consult after a variable deadline ranging from one week to five years [5], which testifies of the chronicity of affection. In our study, the middle deadline of consulting is about 4 months.

Breast examination shows an increase in volume. However, in sclerous forms, mammary gland can decrease in size. The breast achieves in its entirety is bigger than the other one and presents sometimes collateral flow, eczematoid lesion or crusted lesion [20].

The lesions are often at the level of the upper outer quadrant, maybe because of the proximity from axillary areas. Other quadrants can also be affected [22,12]. Breast tuberculosis is often unilateral, bilaterality has only been observed in 3% of cases [22,23]. In our study, the lesions were unilateral especially in the right breast (7 cases) and more pronounced in the outer quadrants (5 cases).

Tumor mass is often unique, multiple nodes are less frequent [24]. Indeed, KHAIZ [5] described a case of breast tuberculosis with two nodes in the same breast. In our study, 7 patients had unifocal lesion and 2 patients had multifocal lesions.

### **Paraclinic**

#### **Mammography**

We don't have specific mammographic signs of breast tuberculosis. Mammography shows suspicious images that might indicate malignant lesion. Taking into account this lack of specificity, mammography represents an element of diagnostic orientation.

Breast tuberculosis has 4 aspects on mammography [2] :

- A dense mass of variable size and shape, with well-defined margins shape and without skin thickening.
- An oval area with undefined contours with skin retraction suggestive of malignancy.
- Stellar dense opacity with skin retraction and thickening.
- Thick, irregular margins with an abnormal architecture and a micronodular lesions of the breast. It often associated with significant Skin thickening and the aspect of miliary breast tuberculosis.

#### **Breast ultrasound**

Shows heterogeneity evocating mastitis. The most common aspect is : less limited heterogeneous hypoechoic mass with discrete posterior reinforcement [25].

As with any collection, ultrasound can be instrumental to guide punctures and biopsies. It allows us also to follow evolution under medical treatment for judging its efficacy.

The association of mammography and breast ultrasound increases the sensibility and the specificity of this two exams.

#### **Breast MRI**

MRI aspects are : grip of intense and early contrast, irregular peripheric enhancement and focused nodes. These aspects aren't specific and can be found with carcinoma and other abscesses. However, MRI helps in staging especially extension to chest wall.

#### **Chest X-ray**

Systematic in breast tuberculosis because of frequently association of pneumonic location [36, 52,53]. In our study, chest X-ray results were without abnormalities.

#### **Examinations of certainty**

Most often, it is the histological examination of the biopsy specimens that determines the diagnosis by revealing the presence of epithelioid follicles and Langhans giant cells, with caseous necrosis.

The presence of tuberculoid lesion with incomplete or outlined follicle can correspond to other granulomatous affections such as leprosy or breast sarcoidosis[28].

Determination of granulomatous lesion with epithelioid follicles and Langhans giant cells and also with caseous necrosis is not pathognomonic of tuberculosis. Indeed, some granulomatous mastitis with caseous necrosis aren't



tuberculosis such as : cryptococcosis, plasmocytosis, tularemia, blastomycosis, histoplasmosis and cellular response with geant cells. In these cases, bacteriological study is necessary.

Bacteriological study is formal argument for diagnosis. It allows the identification by direct examination and BAAR culture from aspiration cytology or biopsy or in secretions of mammary fistula [29].

#### **New methods of identification :**

- QuantiFERON gamma test : positive results show indirectly presence of tuberculosis infection active or dormant. Because of their higher specificity, they are less positive then tuberculinic tests [30].
- Early detection of growth : it's the respirometer radiometric or « bactec system » based on measuring of marked carbon dioxide (C14) which is released by mycobacterium [31].
- Clinical diagnosis by genetical PCR amplification : results are obtained in 24 to 48 hours and specificity is excellent about 100% [31].
- Serologic test of tuberculosis : it's a real serodiagnosis of extra-pulmonary tuberculosis by detection of monoclonal antibody anti antigens of mycobacterium tuberculosis [32,33].

#### **Differential diagnosis**

- breast cancer : which should be the first concern of all physicians because of its high frequency and also its important clinical and radiological similarities especially in the beginnig of evolution [34,35]. It has been suspected in two cases in our study.
- Breast abscess : principal differential diagnostic at young women. Difficulties of diagnostic access are variable depending on evolution of mastitis [36].
- Benign mastopathy : difficulties of differential diagnostic especially at young women [37].
- Paget's disease : appears classically in the form of splotchy blotchies eczematiform in the areolar region, mostly unilateral [20].

#### **Treatment**

It is identical to that of the other extra-pulmonary tuberculosis sites according to the national tuberculosis control program. It consists of an intensive phase combining Isoniazid, Rifampicin and Pyrazinamide for 2 months, followed by a consolidation phase involving Isoniazid and Rifampicin for 4 months: 2RHZ / 4RH. Antituberculous chemotherapy is controlled and administered primarily as an outpatient treatment [38, 39,40].

All patients in our study received their chemotherapy in collaboration with pneumologist according to the national tuberculosis control program.

The indication of surgery is limited. It remains necessary for diagnosis (through biopsy) however as a therapeutic mean, it is recommended especially in second intention if there was a bad response to medical treatment. Surgery would involve the lump excision or the drainage of abscess, by resecting as much as possible the necrotic and infected tissues, or by a segmentectomy (quadrantectomy) or total mastectomy, if the breast is completely ravaged and riddled with fistulas.

In our study, 30% of patients have benefited of put in dish of pus collections with surgical biopsies and one patient had mastectomy of cleanliness.

#### **Prognosis**

Locally, non treated breast tuberculosis has bad prognosis, because it will invade all the breast ; the disease may extend to the posterior wall of the gland collapsing chest wall and pleural cavity [41].

When treatment is early started and well done, breast tuberculosis has good prognosis in most cases.

In our study, we had favourable trend for all patients.

The life is not threat for the patient when mammary tuberculosis is isolated. Meaning, the vital prognosis depends on the other tuberculous localizations which must be systematically investigated with the utmost attention. These extra-mammary localizations might be progressive or quiescent [19].

**Conclusion:-**

Breast tuberculosis is rare even in endemic countries. However, it deserves to be studied due to its extreme resemblances to breast cancer. It affects mainly young women during their genitally active periods. It is promoted by: multiparity, pregnancy, lactation and immunosuppression, especially HIV infection.

Radiological and clinical exam don't reveal any specific signs, hence the need for a bacteriological study and histologic examination to ensure and confirm the diagnosis.

The treatment is mainly medical. However, surgical treatment is useful in case of doubt or after the failure of medical treatment. The outcome under treatment is generally favorable.

Improving the prognosis of mammary tuberculosis involves an early diagnosis and physician insight.

We shall stress on the importance and the crucial need to promote the preventive means prevention in order to eradicate this disease.

**Consent**

Patients did verbal consent

**Conflicts Of Interest**

All authors have no conflict of interest

**References:-**

- [1] Agoda-Koussela. L.K, Djibril. A .M, Adjessou. K.V ; Tuberculose mammaire : A propos d'un cas. J Afr Imag Méd 2014 ; 6 (3) ,73-77.
- [2] Zekri.H, Boufettal.H,Bennairi .Oen collaboration ; La tuberculose mammaire à propos de dix cas .Journal Marocain des Sciences Médicales 2010, Tome XVII ; N°2, 19-22.
- [3] Zouhal . A.,Outifa. A., Filali. A, El Amrani .N, Bensaid. F,El Fehri .S.H, Alaoui . MT; Les tumeurs pseudonéoplasiques du sein : Tuberculose Mammaire à propos de 2 cas. Médecine du Maghreb 2000 N°82, 11.
- [4] ZANDRINO F, MONETTI F, GANDOLFO N. Primary tuberculosis of the breast. A cas report. Acta Radiol 2000;41:61-3.
- [5] KHAIZ D., LAKHLOUFI A., CHEHAB F. et al. Tuberculose mammaire. À propos de deux cas, Sem. Hop. 1993 ;69 :454 458.
- [6] PRICOP F., PRICOP M., DUMITRACHE F., ET AL.La tuberculose mammaire : à propos de deux cas. Rev.Fr Gynécol. Obstét. 1996,91, 381-2.
- [7] HALE J.A., PETERS G.N, CHEEK J.H .Tuberculosis of the breast: rare but still existent review of the literature and report of an additional case, Am. J. Surg. 1985;150:620 624.
- [8] Khaiz D, Lakhloufi A, Cheheb F, Abi F, Bouzidi A. Tuberculose mammaire. À propos de deux cas. Sem Hop Paris 1993;69:454—8.
- [9] Kakkar S, Kapila K, Singh MK, Verma K. Tuberculosis of the breast. A cytomorphologic study. Acta Cytol 2000;44:292—6.
- [10] ELMRABET F., FERHATI D., AMENSSAG L., ET AL.Tuberculose mammaire. Med Trop 2002, 62, 77-80.
- [11] LELEU O., AUBRY P. et al. Tuberculose mammaire, Rev. Mal. Respir. 1997 ;14 :401-403.
- [12] EI MANSOURI A., MOUMEN M., LOUAHLIA S. Tuberculose mammaire : à propos de trois cas, Sem. Hop. Paris 1993;69:12771279.
- [13] PIERON R., GESSAIN A., GRIVAUX M. Un cas de tuberculose mammaire chez une africaine, Sem. Hop. Paris 1985 ; 61:2373 2376.
- [14] K.K. OH1, J.H.KIM1, S.H.KOOK2 .Imaging of tuberculous disease involving breast Eur. Radiol. 8, 1475±1480 (1998) Sringer-Verlag1998.
- [15] HAMIT HF, RAGSDALE TH. Mammery Tuberculosis Jr Soc Méd 1988, 75 : 764-765.
- [16] EI HANCHI Z., KHARBACH A., BERRADA R. et al. Tuberculose mammaire : à propos de huit cas, Rev. Fr. Gynécol. Obstét. 1998;93 :331,334.
- [17] VEYSSIERE C, VIVES M, SMADJA A. Difficultés diagnostiques de la tuberculose mammaire. Lille Chir 1967 ;22 :104-9.
- [18] GOLDMAN KR.Tuberculosis of the breast. Tubercle 1978;59:41-5.

- [19] Ben Hassouna . J et Al ; Gynécologie obstétrique et fertilité 33, (2005) ,870- 876.
- [20] Salem A, Mnif N, Karray M, Kribi L, Ellouze T, Hamza R. Double localisation tuberculeuse mammaire et rachidienne : à propos d'un cas. J Gynecol Obstet Biol Reprod 2004;33:148—50.
- [21] Ducroz B, Gautier G, Monréal JM, Marquet N, Cloup M. Tuberculose mammaire bilatérale : un cas. J Gynecol Obst Biol Reprod 1992;21:484—8.
- [22] WILSON J.P., CHAPMAN S.W. Tuberculous mastitis, Chest 1990; 98:1505 1509.
- [23] SHINDE SR., CHANDAWARKAR RY. DESHMUKH SP. Tuberculosis of the breast masquerading as carcinoma: a study of 100 patients. World J.Surg 1995, 19: 379-81.
- [24] AL MARRI MR., ALMOSLEH A., ALOMOSLMANI Y. Primary tuberculosis of the breast in Qatar : ten years experience and review of the literature. Eur.J.Surg 2000, 166, 687-90.
- [25] AINAB I, IDRISSE A, ZAMIATI W, ADIL A. Les aspects radiologiques de la tuberculose mammaire.
- [26] GOYAL M, SHARMA R, CHUMBER S .Chest wall Tuberculosis simulating breast carcinoma: Image appearance Australas-Radiol 1998feb, 42 (1) : 86-7.
- [27] MENDES W.DA S, LEVI GC, LEVI M. Breast tuberculosis : case report and literature.Rev.Hosp.Clin. Fac.Med.Sao Paulo 1996, Jul-Aug.51(4), 136- 7.
- [28] Collins C.H.and Grange J.M. The bovine tubercle bacilli. J. App. Bacteriol 1983 ; 55 : 13-29.
- [29] MAHJOUB H. La tuberculose mammaire. Thèse de Doctorat en Médecine Tunis 1992, n°111.
- [30] MR. EL BARAKA YASSINE. Etude rétrospective de la prise en charge des malades atteints de la tuberculose : à propos de 1725 cas. Thèse de médecine N° 167. 2015. Faculté de médecine et de pharmacie fès : 31.
- [31] HERRMAN JL, LAGRANGE P. Bactériologie de la tuberculose et des infections à mycobactéries atypiques. EMC, Pneumologie 1999 ; 6-019-A- 34.
- [32] GUILLET-CARUBA C , MARTINEZ V ,DOUCET F : Les nouveaux outils de diagnostic microbiologique de la tuberculose maladie . La revue de medecine interne ; 8 Aout 2014.
- [33] SHARMA N . Diagnostic and al. Value of PCR in Genitourinary Tuberculosis and J Clin Biochem ; 2013, vol 28, no 3 : 305-8.
- [34] Soto C, Vizcaíno I, Isarria S, Pastor MR. Tuberculosis of the breast: imaging findings in two patients. Radiol 2008;50:518—21.
- [35] D'Souza MM, Tripathi M, Shrivastav M, Sharma R, Mondal A. Tuberculosis mimicking malignancy. Hell J Nucl Med 2009;12:69—70.
- [36] CHANDHURI M., SEN S., SENGUPTA J. Breast lumps : a study of 10 years. J.Indian Med Assoc 1995, 93, 455-7.
- [37] Ben Hassouna J, Gamoudi A, Bouzaiene H, Dhiab T, Khomsi F, Chargui R, et al. La tuberculose mammaire : étude rétrospective de 65 cas. Gynecol Obstet Fertil 2005;33:870—6.
- [38] GUIDE DE LA LUTTE ANTITUBERCULEUSE .Ministère de la santé publique .Maroc 2001.
- [39] OMS : Le traitement de la tuberculose :principes à l'intention des programmes nationaux. WHO/CDS/TB 2003.313
- [40] MAHER D ; CHOLET P ;SPINCI S ; AND AL ; Traitement de la tuberculose :principes à l'intention des programmes nationaux . WHO/TB/97 .220.
- [41] Salem A, Bennaceur R, Driss M, Mehiri S, Mrad K, Rajhi H, et al. Imagerie des mastites granulomateuses. Image Femme 2008;18:46—54.