

Tuberculous Mastitis - A Diagnostic Dilemma

FAIZA FAROOQ

ABSTRACT

Background: Breast tuberculosis is a rare occurrence and is usually mistaken as breast cancer or pyogenic breast abscess. Clinically as well as radiologically/pathologically it may mimic both pyogenic abscess and malignancy.

Aim: To determine diagnostic validity of mammography and ultrasonography for tuberculous mastitis.

Methods: This retrospective study was carried out at Ittefaq Hospital Trust Lahore over a 4 years period i.e., July, 2010 to July, 2014. A total of 22 patients with tuberculous mastitis were included. The cases were retrieved after studying medical records. Their clinical, radiological and pathological data was reviewed in detail. Cases with proven histological diagnosis of tuberculous mastitis were included.

Results: The average age at presentation was 35.6 years. The right breast involved in 60.5% and left in 39.5% cases. The most common presentation was a painful lump in 54.5%, painless lump 35.5% and discharging sinus in 10%. Mammography showed ill-defined opacity in 40.5% and asymmetrical density in 35.8%. On ultrasound 45.5% of lesions appeared hypoechoic mimicking mass while 31.6% were hypoechoic with internal debris having abscess like appearance.

Conclusion: Tuberculous mastitis is chronic inflammatory disease mimicking other pathologies like abscess or carcinoma.

Key words: Tuberculous, Mastitis, Breast

INTRODUCTION

Breast lumps constitute a significant proportion of surgical cases in women of both developed and developing countries¹. Tuberculous mastitis is rare, especially in Western countries.² Tubercular mastitis is a rare because mammary gland tissue, like spleen and skeletal muscle, offers resistance to the survival and multiplication of the tubercle bacillus. Tuberculous mastitis (TM) is found mostly in young, multiparous women. Male TM is extremely rare, and accounts for only 4% of all cases. This strikingly lower incidence in males points towards a significant role of parity, pregnancy and lactation as likely predisposing factors³. Tuberculosis of the breast can mimic carcinoma, whereas in young patients it can be mistaken for a pyogenic breast abscess, thus labeled a "great masquerader" in recognition of its multifaceted presentation⁴. It can clinically mimic malignancy-causing misdiagnosis as breast cancer^{5,6}. The significance of primary tubercular mastitis is due to rare occurrence and often overlooked and misdiagnosed as pyogenic breast abscess or malignancy⁷. Its incidence in developed countries is 0.1-0.5%. It can be primary or secondary. In undeveloped nations it is between 3 and 4%⁸. The incidence of tubercular mastitis although decreasing in the West, could show a resurgence with the global pandemic of AIDS⁹. It should be included in the differential diagnosis of breast lesions in immune

compromised patients especially in tuberculosis endemic areas of the world¹⁰. Except in patients presenting with sinuses, it is a challenge to diagnose¹¹. Knowledge of its varied clinical presentation and diagnostic modalities help in diagnosing this easily treatable disease¹². Alternative diagnoses such as idiopathic granulomatous mastitis should be made only after failure of an adequate trial of anti-tuberculosis treatment. FNAC is a useful diagnostic tool even if AFB cannot be demonstrated¹³. Anti-tuberculosis antibiotic therapy may be associated with surgery in case of extension¹⁴.

PATIENTS AND METHODS

This retrospective study was included 22 patients and conducted in Radiology Department of Ittefaq Hospital Lahore from July 2010 to July 2014. All female patients with biopsy proven tuberculous mastitis were included in the study. Patients in which biopsy was not done were excluded. Performa with features like age, sex, clinical presentation, mammographic, ultrasound features and histopathological results was recorded. Statistical analysis was carried out using SPSS 16. Results were presented as frequencies and percentages.

RESULTS

The average age at presentation was 35.6 years [range 25-52 years]. The right breast involved in 60.5% and left in 39.5% cases. The most common

Department of Diagnostic Radiology, University of Lahore
Correspondence TO Dr. Faiza Farooq **e-mail:**
tofaiza@gmail.com

presentation was a painful lump in the upper outer quadrant of the breast 54.5%, painless lump 35.5% and discharging sinus in 10%. Mammography showed ill-defined opacity in 40.5% and asymmetrical density in 35.8%. On ultrasound 45.5% appeared hypoechoic mimicking mass while 31.6% were hypoechoic with internal debris having abscess like appearance. Rest of lesions 22.9% had mixed echogenicity. Diagnosis was obtained via fine needle aspiration 10(45.5%), core biopsy 9(40.9%) and excision biopsy 3(13.6%). Recurrence was seen in only one patient who was managed with conservative surgery and another course of antituberculous therapy (Table 1).

Table 1: Demographic presentation of data

Variable	No.	%
Site		
Right	13	60.5
Left	9	39.5
Presentations		
Breast lump (painful)	12	54.5
Breast lump (painless)	8	35.5
Discharging sinus	2	10.0
Mammographic features		
Ill-defined	9	40.5
Asymmetrical density	7	30.8
Not done	6	28.7
Ultrasound		
Hypoechoic lesion	10	45.5
Ill-defined hypoechoic	7	31.6
Mixed echogenicity	5	22.9
Biopsy		
FNAC	10	45.5
Trucut	9	40.9
Excision	3	13.6

DISCUSSION

Breast tuberculosis (breast TB) is an extremely rare disease, so case reviews are also rare. With the re-emergence of TB, atypical forms are appearing, with an increase in the proportion of extra-pulmonary disease and a widening of the age range at presentation.³ Our mean age of presentation was higher than reported from neighboring countries.¹⁵ This could be due to the late presentation attributable to cultural norms prevalent here. Likewise Indian workers found that 49.20% patients were below 30 years of age.¹² Our study showed the preponderance of left breast while Afridi et al found it to be equal in both breasts.¹⁶ The upper outer quadrant was determined to be the favorite site and it is consistent with other studies.^{17,18} In an Indian study by Mehta et al¹² the commonest presentation was with painless lump (73%) more than almost double of our study. This could be due to the late presentation in our population. In Iran also the prevalence of painless

lump was more than ours.¹⁵ Although most studies describe the prevalence of painful lump less as compared to painless lump¹⁹, we found the opposite due to the reasons described above. The proportion of discharging sinus was more compared to other studies¹⁸, which again is due to late presentation in our population. However our percentage of sinuses was equal to an Egyptian study²⁰, which has similar cultural stigmata. The prevalence of asymmetrical density (nodular) on mammography was less and ill-defined (diffuse) more than reported in a Saudi study.²¹ The causes of this difference are not known but further studies are needed in this regard. Other finding on mammography described in literature are mass lesion mimicking malignant tumors, smooth bordered masses, axillary or intramammary adenopathy, asymmetric density, duct ectasia, with skin thickening and nipple retraction, with macrocalcification, and skin sinus.²⁰ The percentage of hypo echoic masses on ultrasonography was more than reported in an Irish study²⁰ but less than reported in America.²² Fine needle aspiration cytology has become the first choice in diagnostic procedures in the management of a variety of breast diseases. The technique can be successfully used to diagnose granuloma in breast aspirates and to demonstrate the presence of acid-fast bacilli.²³ Our study utilized FNAC for diagnosis in the majority of cases and indeed FNAC acted as an efficient modality for collection of material for PCR by Indian workers.²⁴ Mehta et al¹² found that FNAC is a sensitive tool of diagnosis in 74.60% patients; however 25.39% cases were diagnosed with biopsy. In our study biopsy was done in comparatively more patients. This has probably something to do with technical differences.

CONCLUSION

Tuberculous mastitis is a rare entity but it should be considered in differential diagnosis in patients with mammary disease. Biopsy is gold standard to confirm the diagnosis of mastitis. Anti-tuberculosis drugs are better treatment and conservative surgery seems to be adequate treatment.

ACKNOWLEDGEMENT

I am thankful to Dr Muhammad Aqeel Babri and Dr Huma Majeed Khan for their support and co-operation during the study.

REFERENCES

1. Chandanwale SS, Gupta K, Dharwadkar AA, Pal S, Buch AC, Mishra N. Pattern of palpable breast lesions on fine needle aspiration: A retrospective analysis of 902 cases. *J Mid Life Health* 2014;5(4):186-91.

2. Robbins HL, Hetzel M, Mungall S, Cawthorn SJ. Interferon gamma release assay in the diagnosis of tuberculous mastitis. *Ann Royal Coll Surg Engl* 2015;97(1):e1-2.
3. Cantisani C, Lasic T, Salvi M, Richetta AG, Frascani F, De Gado F, et al. Male tuberculous mastitis: a rare entity. *La Clinica terapeutica* 2013;164(4):e293-5.
4. Gon S, Bhattacharyya A, Majumdar B, Kundu S. Tubercular mastitis - a great masquerader. *Turk Patoloji Dergisi* 2013;29(1):61-3.
5. Choi SH, Jang KS, Chung MS. Bilateral granulomatous mastitis with a different etiology. *Cancer Biomarkers* 2015;15(2):151-6.
6. Maroulis I, Spyropoulos C, Zolota V, Tzorakoleftherakis E. Mammary tuberculosis mimicking breast cancer: a case report. *J Med Case Reports* 2008;2:34.
7. Prathima S, Kalyani R, Parimala S. Primary tubercular mastitis masquerading as malignancy. *J Nat Sci Biol Med* 2014;5(1):184-6.
8. Ochoa Aguilar MA, Ortiz Martinez JD. Tuberculosis of the breast. A case report. *Ginecologiy obstetricia de Mexico* 2009;77(6):282-6.
9. Tewari M, Shukla HS. Breast tuberculosis: diagnosis, clinical features & management. *Indian J Med Res* 2005;122(2):103-10.
10. Dodiya-Manuel ST, Dodiya-Manuel A. Tuberculosis of the breast. *Nigerian journal of medicine*. *J Nat Assoc Res Doctors Nigeria* 2013;22(1):72-4.
11. Challa VR, Srivastava A, Dhar A. Scrofulous swelling of the bosom masquerading as cancer. *Indian J Med Microbiol* 2014;32(1):82-4.
12. Mehta G, Mittal A, Verma S. Breast tuberculosis-clinical spectrum and management. *Indian J Surg* 2010;72(6):433-7.
13. Elsiddig KE, Khalil EA, Elhag IA, Elsafi ME, Suleiman GM, Elkhidir IM, et al. Granulomatous mammary disease: ten years' experience with fine needle aspiration cytology. *Inter J Tubercu Lung Dis* 2003;7(4):365-9.
14. Daali M, Hssaida R, Hda A. Primary tuberculosis of the breast. *Presse Med* 2001;30(9):431-3.
15. Khodabakhshi B, Mehravar F. Breast tuberculosis in northeast Iran: review of 22 cases. *BMC* 2014;14:72.
16. Afridi SP, Memon A, Rehman SU, Memon A, Baig N. Spectrum of breast tuberculosis. *JCPSP* 2009;19(3):158-61.
17. Baharoon S. Tuberculosis of the breast. *Ann Thorac Med* 2008;3(3):110-4.
18. Jalali U, Rasul S, Khan A, Baig N, Khan A, Akhter R. Tuberculous mastitis. *JCPSP* 2005;15(4):234-7.
19. Harris SH, Khan MA, Khan R, Haque F, Syed A, Ansari MM. Mammary tuberculosis: analysis of thirty-eight patients. *ANZ J Surg* 2006;76(4):234-7.
20. Sakr AA, Fawzy RK, Fadaly G, Baky MA. Mammographic and sonographic features of tuberculous mastitis. *Eur J Radiol* 2004;51(1):54-60.
21. Al-Marri MR, Aref E, Omar AJ. Mammographic features of isolated tuberculous mastitis. *Saudi Med J* 2005;26(4):646-50.
22. Crowe DJ, Helvie MA, Wilson TE. Breast infection. Mammographic and sonographic findings with clinical correlation. *Invest Radiol* 1995;30(10):582-7.
23. Mehrotra R. Fine needle aspiration diagnosis of tuberculous mastitis. *Indian J Pathol Microbiol* 2004;47(3):377-80.
24. Nalini G, Kusum S, Barwad A, Gurpreet S, Arvind R. Role of polymerase chain reaction in breast tuberculosis. *Breast Dis* 2014;11:39-43.