



## Original Article

# Feasibility of surgical management in patients with mammary tuberculosis-study of 100 cases.

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### Abstract

Tuberculous mastitis is a rare entity in patients with mammary disease even in countries where incidence of tuberculosis is high. In Bangladesh, TB is an endemic disease but breast tuberculosis is rarely reported. Its clinical patterns and treatment strategies are changing day by day. With this study, we aimed to analyze the role of surgery in diagnosis and treatment of hundred (100) cases received care for tuberculous mastitis at the Chest Disease Hospital, Rajshahi, from July' 2012 to July' 2016. This is a prospective nonrandomized descriptive study. Diagnosis was made in all patients initially by cytological examination from suspected lesions, which revealed typical tuberculous lesions. In all the patients the diagnosis was confirmed by biopsy of the lesion (open biopsy or core cut biopsy) with histological examination and detection of acid fast bacilli in discharge by Gene x-pert test and Z-N staining to exclude idiopathic granulomatous mastitis, malignancy and very rare concomitant malignancy. Medical therapy with anti-tubercular drugs (ATT) ranging from 9 to 12 months with follow up monthly was the mainstay of treatment. Surgical intervention reserved for selected refractory cases (36%). Extension of anti-tubercular therapy from 9 to 12 or 18 months required in fifty-eight(58) patients on the basis of slow clinical response. Complete resolution obtained in 92 patients but residual tiny mass in eight patients confirmed by repeated FNAC or biopsy to be fibrotic. Surgery play an essential role both in diagnosis and treatment of tubercular mastitis in addition with ATT but beware about unnecessary surgical intervention as majority of patients cured with only ATT.

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### Introduction

Tuberculosis is the most widespread and persistent human infection in the world. The infection can involve any organ and mimic other illness, hence it is called the great mimicker. Tuberculosis of the breast is an uncommon presentation of tuberculosis, even in countries where the incidence of pulmonary and extrapulmonary tuberculosis is high. Its prevalence is less than 0.1% of all surgically-treated breast diseases in Western countries<sup>1, 2-5</sup> and 3-4% in higher TB endemic countries like the Indian subcontinent.<sup>2</sup>

Bangladesh ranks 6<sup>th</sup> among the 22 high TB burden countries,<sup>6</sup> but breast tuberculosis is very rarely reported. Despite the encouraging worldwide progress in concerted preventive program on tuberculosis, global tuberculosis burden recently has increased in many industrialized countries due to increased number of immunocompromised and AIDS patients. The incidence, clinical presentation, diagnostic tools and therapeutic modalities of breast tuberculosis has been gradually changing due to changes in the environment and socioeconomic conditions. So

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study of cases of mammary tuberculosis is necessary to acclimatize with the changing clinical patterns and newer therapeutic approaches. With this series, we aimed to analyze the diagnostic difficulties and role of ATT and surgery in treatment of hundred (100) cases received care for tuberculous mastitis.

### Material and Methods

A total of 137 patients with a presumptive diagnosis of TB mastitis on the basis of clinical suspicion and cytological finding came to the Chest disease hospital, Rajshahi in four years from July 2012 to July 2016. Out of these 137 patients, 100 were confirmed as TB mastitis by core cut biopsy and open biopsy and included in this prospective non randomized descriptive study. Male patients and female below the age of 13 years were excluded from the study. A well informed written consent was obtained from all patients in a separate consent form. Photograph of breast with academically interesting lesion were taken for printing and publication purpose which was clearly explained to the patients and permission were taken. Data for each patient were recorded. Detail clinical information including age, socioeconomic status, reproductive history, lactational status, clinical presentations, duration of symptoms, previous history of pulmonary or extra pulmonary TB, contact with TB patients and findings of relevant investigations like ESR, mantoux test and chest radiogram were recorded for all patients in a predesigned data record sheet.

The right breast (56%) affected more than left breast (43%) and bilateral in one patient (1%). Palpable lump (18%), chronic discharging sinus with or without lump (34%), breast abscess with or without discharging sinus (18%) and recent abscess drainage scar (30%) was the most common presentation. FNAC were done initially for all suspected TB mastitis patients. Cases presented with abscess directly undergone incision and drainage and biopsy from abscess wall and ATT started according to histopathology report. Patients present with inflammatory mass with or without discharging sinus, nodular lump advised for core cut biopsy if FNAC is positive prior to ATT. After starting ATT if satisfactory clinical improvement did not found in 2-3 months then excision of mass or sinectomy done on the basis of clinical judgement. For detection of acid fast bacilli where discharge is scanty sent for Z-N staining and when discharge or pus more or about two (2) ml sent for Gene x-pert test. A nine months regimen of four drugs anti-tubercular therapy were given to all patients. The doses of drugs and duration of therapy were adjusted depending on the weight of the patient and clinical response to therapy respectively. Ninety two (92) patients resolve completely but in eight (8) patients ill-defined mass persist and confirmed by repeated FNAC to be fibrotic. A short course of flucloxacillin was given to those patients who needed surgical intervention.

### Results:

**Table 1:** Clinical presentation at study entry of mammary Tuberculosis (n=100)

Clinical presentation	Right	Left	Bilateral	Total no
Multiple sinus/s with underlying breast lump	20	11	01	32
Breast lump with abscess	06	04	00	10
Abscess drainage scar with lump	18	12	00	30
Lump Only	07	11	00	18
Discharging sinus/s with no lump	02	00	00	02
Discharging sinus/s with abscess	03	05	00	08
Total	56	43	01	100

Most common clinical presentation was discharging sinus with underlying lumpiness (32%) and no response to non-TB antibiotic therapy. Breast abscess of non-lactating mother or chronic breast abscess despite adequate treatment was the next common presentation. (Table-1)

**Table 2:** Distribution of patients depending on investigations Modalities (n=100)

Investigation modalities	No of patient sent	Positive Result
Chest radiogram	100	Old PTB in 03 cases
ESR	100	Raised in 90 cases
Mantoux test	100	15
FNAC	100	100
Open biopsy -		
a)Excision of lumps including sinus	06	6
b)Incision and drainage + incision biopsy from abscess wall	21	21
d)Excision of the mass	05	5
e)Wedge excision from the mouth of the sinus with sinectomy.	04	4
Core cut Biopsy	79	79
USG of Breast	100	Inconclusive
Ziehl-Neelson stain	31	2
Gene Xpert test (From pus)	21	3

FNAC was the initial diagnostic tool to enroll in study. In seventy nine (79) patients core cut biopsy advised and twenty one (21) patients suggested for incisional biopsy along with drainage of pus. Fifteen (15) core cut biopsy positive patients later required excision of mass or sinectomy due to slow clinical response and the excised sample sent for histopathological exam. Thirty one (31) sample of pus or discharge from sinus sent for Z-N stain and twenty one (21) sent for Gene Xpert test to identify the bacilli. (Table-1)

**Table 3:** Therapeutics modalities of Mammary Tuberculosis (n=100)

Therapeutic modalities	No	Percentage (%)
Excision of the lump + ATT	05	05
Excision of mass + Sinectomy + ATT	06	06
Incision drainage of abscess +ATT	21	21
ATT Only	64	64
Total	100	100

Sixty four (64) patients cured by conventional Anti- TB chemotherapy but rest thirty six (36) patients required surgical intervention. (Table-2)

**Table 4: Duration of ATT**

Duration	No of patients
9 months	42
12 months	52
16 months	05
18 months	01

Most of the patients (94%) required 9-12 months ATT, extension required in only six (6%) cases. (Table-3)

**Figure -1:** Typical presentation of TB mastitis –Multiple Ch. Discharging sinus



**Discussion:**

Three forms of breast tuberculosis nodular, disseminated, and sclerosing, have been described.<sup>7</sup>Nodular pattern may be mistaken for a fibro adenoma or carcinoma.<sup>8</sup> The disseminated form frequently leads to caseation and sinus formation. We observed 42 out of 100 patients had sinus formation almost nearer to that reported by Khanna et al (26 out of 52).<sup>9</sup> Sclerosing tuberculosis characterized by dense, fibrotic breast tissue and is slow growing, without suppuration generally appears in older women. Mammary tuberculosis is a disease of younger age group; uncommonly an older patient may present with a mass that mimics carcinoma, whereas the younger patient usually manifests sign of a pyogenic breast abscess.<sup>10</sup>Early diagnosis is difficult, as the characteristic sinuses occur late in the course of the disease. In addition, presence of these sinuses

is not the distinctive feature of tuberculosis, as several cases of non-tuberculosis granulomatous mastitis also present with sinuses. However, tuberculosis should be suspected in a patient who has a recurring breast abscess after adequate drainage on previous occasions. Breast TB is paucibacillary, as a result, Mycobacterial culture - the gold standard for the diagnosis of TB ,the tuberculin skin test, microscopy, and nucleic acid amplification techniques such as polymerase chain reaction (PCR) do not have the same diagnostic utility as in pulmonary tuberculosis abscess.<sup>8</sup> Therefore, TB infection of the breast and other extra pulmonary sites may be misdiagnosed as another granulomatous disease.<sup>10</sup>In this series only fifteen patients (15) was Mantoux positive. Radiological imaging modalities like mammography or ultrasonography are unreliable in distinguishing tuberculosis mastitis from

carcinoma because of its nonspecific features.<sup>11</sup> Similarly computed tomography and magnetic resonance imaging are not diagnostic without histological confirmation. Needle Aspiration Cytology can diagnose approximately 73% of breast TB cases. Demonstration of acid fast bacilli on FNAC is not mandatory since for AFB to be seen microscopically, their number must be 10,000-100,000/ml of material. In our series aspirated pus or discharge sent for Gene xpert test (PCR based test) and Z-N staining but it was positive respectively in three (3) and two (2) cases. Diagnosis relied on histological appearance. Histopathology can differentiate granulomatous mastitis due to predominantly lobular granulomas and absence of caseous necrosis, compared to tuberculous mastitis which usually centres around ducts rather than lobules. Before the discovery of anti-tuberculosis drugs, surgeons performed mastectomies to treat mammary tuberculosis. Wilson and MacGregor<sup>12</sup> recommended simple mastectomy for most cases, due to development of local recurrence in three of their five patients following less severe procedures. However, today the combination of drug therapy and limited excision of diseased breast tissue is a method of choice.<sup>13, 14</sup> In our series, anti-tubercular chemotherapy was given to all cases. In thirty six (36) cases it was given in combination with excision of necrotic tissue and drainage of abscess. The rate of surgical intervention is lower in our series than that of khanna et al (24 out of 52).<sup>15</sup> Follow up done monthly during ATT and then three monthly in next one year. Extension of ATT needed highest 18 months. Complete resolution observed in ninety two (92) patients and residual tiny lumpiness in rest eight (8) patients confirmed by repeated FNAC as fibrotic. All patients regularly attended our follow up clinics during last one years, with no recurrence of disease being recorded. Surgical intervention is only necessary if there is poor response to anti-TB therapy and is reserved for draining cold abscesses or excision of residual lumps. Simple mastectomy with or without axillary clearance is reserved for cases with extensive disease causing a large painful ulcerated mass involving the entire breast.

### Conclusion:

In conclusion, 'presumptive diagnosis' can lead to the mismanagement of potentially life threatening conditions and amounts to medical negligence, so core cut biopsy is mandatory to achieve histopathological diagnosis of TB mastitis. If ATT can be started in early stage then majority of cases can be cured without surgical intervention. But due to ignorance, poverty and conservative social customs late presentation is common in our country and surgical intervention is mandatory in some cases along with ATT.

### Disclosure:

All the authors declared no competing interest.

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