



## THE MISLEADING SUPERADDED TUBERCULOUS INFECTION OF THE MASTECTOMY SCAR MASQUERADING THE SCAR RECURRENCE AND CHRONICLES OF TREATMENT: AN INTERESTING CASE REPORT

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### ABSTRACT

**Introduction:** Superadded tuberculosis infection in post mastectomy scar recurrence is very uncommon. Differentiating scar infection of TB from tumour recurrence remains a clinical challenge and needs a high degree of clinical suspicion, meticulous investigation for active tubercular bacilli and through histopathological examination to detect viable malignant cells.

**Case summary:** We present a 32 year female patient of carcinoma breast treated with modified radical mastectomy, who developed scar recurrence with superadded tubercular infection. After failure of antitubercular therapy patient was treated with radiotherapy which resulted in complete response in scar site.

**Conclusion:** Coexistence of TB and malignant scar recurrence is a rare but possible clinical scenario. An unhealthy postmastectomy scar, with TB infection not responding to ATT and no viable TB bacilli needs early radiotherapy. This unique case report further elucidate that events like infection occurring postoperatively may predispose future recurrences whose exact cause and etiology remains unexplained

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### INTRODUCTION

Scar recurrence or metastasis is the most common cause of cancer-related death in women with breast cancer; however it is in declining trend due to improved surgical techniques and better understanding of the disease. [1] The risk of recurrence is highest in the first 2-3 years and then decreases continuously.[2] Impaired wound healing in post mastectomy scar is mostly associated with infectious but sometimes with malignant aetiology.[3] Both these scenarios present with unhealthy scar which interrupts the desired treatment either chemotherapy or radiotherapy, thus prolonging overall treatment time. Early scar recurrence by nature is suggestive of an aggressive tumor and is associated with poor outcome with a majority of such patients failing distally too. But an unhealthy wound post mastectomy due to infection of tuberculous bacilli is rare but still has been a health problem in developing countries [4]. TB Breast, a form of extrapulmonary TB is uncommon even in countries where the incidence of TB is high due to relative resistance of breast tissue to the infection as it provides an infertile environment for the survival and multiplication of tubercle bacilli [5], thus making post mastectomy scar infection by tubercle bacilli even rarer. Differentiating these two entities with subsequent

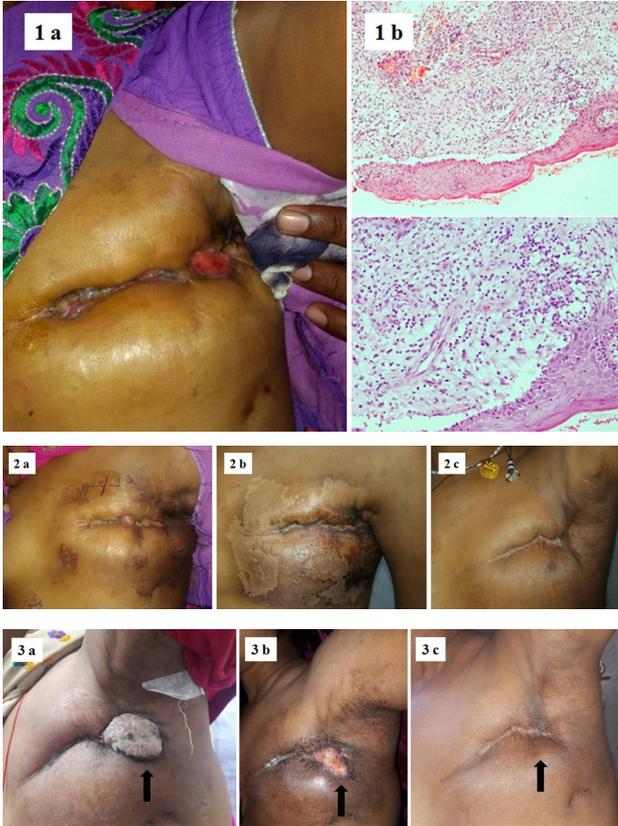
treatment remains pivotal in achieving optimal outcome in this subgroup of patients. We report an unusual case of mastectomy scar infected with TB, masquerading as scar recurrence even after 6 months of anti tubercular therapy (ATT). Patient was treated and cured by local radiotherapy but developed genuine scar recurrence after 2 years which again responded very well to non surgical approach i.e. chemotherapy and monoclonal antibody therapy.

#### Case Report

A 32 year female, known case of carcinoma breast consulted breast OPD for post mastectomy radiotherapy of the chest wall. The detailed history revealed complaints of painless lump in her left breast and left axilla which was insidious in onset. Fine Needle Aspiration cytology from both the swellings revealed ductal carcinoma. Routine investigations and metastatic work up was within normal limits. Thereafter patient underwent left modified radical mastectomy in July 2014 following 6 cycles of neo adjuvant chemotherapy. Histopathology showed infiltrating ductal carcinoma, grade III with clear margins and 7/16 lymph node metastases. Post-operatively patient had persistent non healing scar with reddening and edema of adjacent skin. Later, despite of antibiotic management the scar wound developed frank gaping

and indurations with nodular swelling around the scar. On further investigations, smear from the wound detected positive for acid fast bacilli. After 6 months of ATT, patient was referred for chest wall irradiation.

At the time registration in the radiation oncology department, patient presented with an unhealthy mastectomy scar. Frank gaping of wound with indurations and nodular swelling around the scar was strongly suggestive of scar recurrence (Figure 1a).



### Investigations

Due to an unhealthy left mastectomy scar, the case was discussed in multi-disciplinary clinics. Uniform diagnosis of post mastectomy scar recurrence was made and board was in unanimous consensus for repeat biopsy from the nodular swelling to confirm the scar recurrence. However to our surprise the biopsy from the nodular swelling around the scar revealed inflammatory granulation tissue with inflammatory cell infiltrate predominantly comprising of neutrophils, histiocytes, multi-nucleated histiocytic giant cells, lymphocytes and plasma cells (Figure 1b). There were no malignant cells.

### Treatment

A nonhealing postmastectomy scar in a patient of breast carcinoma on the back drop of inflammatory granulation tissue on histopathology but non responsive to 6 months of ATT warranted chest wall radiotherapy. Thus patient was planned for external beam radiotherapy to the chest wall and regional lymphatics to a total dose of 4240 cGy in 16 fractions which was well tolerated with grade 1 skin reactions and there after complete resolution of skin reactions (Figure 2 a,b,c). However 24 months later patient developed a 3x4 cm proliferative lesion on the lateral end of mastectomy scar (Figure 3 a) which was cytology proven to be ductal carcinoma. After a thorough metastatic work up patient was started on docetaxel and

capecitabine based chemotherapy. As the tumor was ER/PR -ve and HER2Neu 3+, trastuzumab was added to abovementioned chemotherapy protocol. The response to this chemotherapy regimen was encouraging (Figure 3b) with complete disappearance of scar lesion after 6 cycles (Figure 3c). At the time of writing this case report patient had received 16 cycle trastuzumab therapy and she is in complete remission.

### DISCUSSION

The primary treatment modality for breast carcinoma remains surgery either radical mastectomy or breast conservation surgery being two equivalent options. The incidence of isolated loco-regional recurrences post mastectomy was about 12% as was shown at 10 year follow up of 5 NSABP studies involving about 5000 patients.[1] Among these predominant (56%) being in chest wall and mastectomy scar. According to study by Arriagada[6] *et al* 5 to 10% of patients undergoing mastectomy for operable breast cancer will have a chest wall or regional nodal recurrence within 10 years. Loco-regional recurrences are relatively more infrequent in mastectomy scar as compared to breast conservation therapy (10-15% at 10 years)[7].

Post mastectomy poor wound healing due to infections (tuberculosis or any bacterial) tend to obscure the diagnosis of scar recurrence, thus further complicating the treatment. Synchronous or consequential infection and malignancy has remained a diagnostic and therapeutic dilemma, specifically in tuberculosis endemic regions. The delayed wound healing delays the consequential treatment like RT or CT thus prolongs the overall treatment time which adversely affects the outcome [8].

The association of TB with carcinoma was initially described 200 years ago by Bayle who considered 'cavitation cancreuse' as one of the various types of TB [9]. It is usually consequential to the immunosuppressive effects of some of the implemented therapies or due to the associated immune dysfunction. In our case there was no previous history of pulmonary or extra-pulmonary tuberculosis in the past. There might have been chemotherapy associated immunosuppression that would have paved the way for tubercular infection to the scar site. TB should be taken into consideration in every day clinics and included in the differential diagnosis of apparently malignant lesions, at least in endemic regions (10), in perplexing cases (11) and when the response to treatment deviates from the expected usual course. In the present case, post ATT breast scar was appearing like local recurrence but responded well to local radiotherapy and remained disease free for 24 months.

But despite the disease free survival of two years patient developed pathologically confirmed genuine scar recurrence. The exact basis of this recurrence was unknown but draws our attention to the previous TB infection and consequential delay in chest wall RT which might be associated. Furthermore the patient had poor prognostic features like advanced stage, young age, hormone receptor-negative status, or poorly differentiated histologic tumor grade in the beginning. (12) Again the overall treatment time (OTT) and specifically gap between surgery and RT has been a known predictive factor for recurrence. In this case the delay in RT owing to poor wound healing which was further complicated by detection of breast TB might have resulted in late recurrence. This intern raises a valid question whether withholding RT in such a case

with masquerading scar recurrence and superadded TB infection is justified. Again the attributable risk of tubercular infection at scar site on loco-regional recurrences needs further evaluation.

The treatment of scar recurrence has remained controversial. Mostly a surgical intervention is necessary [13] However our case was managed only by systemic therapy and surgery was kept reserved. However complete remission with such regimen in a recurrent setting is quite rare. Our finding suggests that judicious use of radiotherapy and combination chemotherapy with trastuzumab may result in complete remission in such clinical scenario. In available literature no such cases have been reported in literature where complete remission is achieved with chemotherapy and targeted therapy without any surgical intervention.

## CONCLUSIONS

1. Breast tuberculosis is an uncommon entity even in an endemic zone. Superadded TB infection in post mastectomy scar recurrence is even more infrequent.
2. Differentiating scar infection of TB from tumour recurrence is an uphill task and needs accurate clinical suspicion, meticulous investigation for active tubercular bacilli and through histopathological review to detect viable malignant cells.
3. Both TB and malignant scar recurrence may coexist and an unhealthy wound with TB infection not responding to ATT and no viable TB bacilli need early radiotherapy.
4. This unique case report further elucidate that events like infection occurring postoperatively may predispose future recurrences whose exact cause and etiology remains unexplained

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