
Tuberculosis of the breast masquerading as breast cancer

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ABSTRACT

A 57-year-old female from Ghana was found to have fungating breast lesion and treated for breast cancer with empirical chemotherapy in her home country. On presentation to our breast surgical department in the UK, triple assessment and core biopsy showed the fungating mass to be a caseating granuloma in keeping with Tuberculosis infection.

INTRODUCTION

We report a case of a 57-year-old female from Ghana found to have tuberculosis of the breast masquerading as a fungating breast cancer. On initial presentation to the local breast unit in her home country, this was presumed to be breast cancer and was treated empirically with chemotherapy. Subsequent core biopsy has shown this to be a caseating granuloma in keeping with Tuberculosis infection.

CASE REPORT

A 57-year-old nurse living in Ghana presented to her local breast unit with a tender lump involving the skin of the right breast. She gave a history of lethargy and weight loss, but there was no history of cough, haemoptysis or night sweats. There was no family history of breast cancer, she reached menarche at the age of fourteen years and had her first child at the age of nineteen. She had a past medical history of hypertension and cholelithiasis and was a non-smoker

As part of her initial assessment it is unclear as to whether any imaging was performed, however no biopsies were taken from the breast lump. She was given a clinical diagnosis of breast cancer based on the presence of a fungating tumour in the upper outer quadrant of the right breast. Treatment in the form of empirical chemotherapy was commenced. Following the first cycle of chemotherapy with an unknown agent, the patient developed a widespread ulcerating rash and rapid alopecia. Consequently, chemotherapy was stopped.

The patient then moved to the United Kingdom and was referred to the breast clinic for ongoing management of a presumed inflammatory cancer. On clinical examination, she was found to have a 4x4cm fungating mass in her axillary tail of the right breast. There was no evidence of axillary lymphadenopathy. Mammograms failed to identify the lesion and a clinical core biopsy was taken. A widespread lichenification of the skin across her back and limbs was also noted, which she reports appeared within three days of starting chemotherapy in Ghana.

The alopecia coinciding with her initial cycle of chemotherapy was now resolving.

Blood results showed anaemia of chronic disease and autoantibodies suggesting autoimmune disease. Human Immunodeficiency Virus (HIV) test was negative and liver function tests were normal. A chest radiograph was also normal.

The biopsy showed moderate mixed inflammatory cell infiltrate with caseous necrosis and a surrounding granulomatous reaction, with no evidence of malignancy. Biopsies taken from the extensive skin rash showed lichenoid granulomatous type of eruption.

Based on these findings, a diagnosis of tuberculosis was made and she was referred to the respiratory physicians. She was commenced on Rifampicin 600mg, Isoniazid 300mg, Pyrazinamide 2g and Ethambutol 900mg daily. Interferon gamma release assay test (ELISPOT TB) was positive, providing further support for a diagnosis of tuberculosis.

She received this anti-tuberculosis regimen for two months. During this time, the skin and soft tissue infection in her right breast resolved completely. Side effects of the medication meant she was unable to complete a full course of treatment, however she has been kept under close review in the outpatient clinic and continues to do well.

DISCUSSION

Tuberculosis is the commonest cause of infectious disease-related death worldwide and is a multisystem disease caused by *Mycobacterium Tuberculosis*. It most commonly affects the lungs however can affect many other organ systems. Extrapulmonary infections occur in 20% of cases, and 50% of extrapulmonary TB have no evidence of lung infection on chest radiography or sputum analysis. The incidence of cutaneous TB appears to be low – approximately 0.1% of referrals to dermatology clinics.

Infection results from aerosol droplet spread through lungs and mucus membranes.

Globally, 1 in 3 individuals are infected with *M. Tuberculosis*. Countries in Sub Saharan Africa have among the highest prevalence of the disease.

There are a number of case reports in the literature describing tuberculosis of the breast. Unsurprisingly these originate mainly from the Middle East and South Asia, and all rely on histological analysis to establish the diagnosis of breast tuberculosis.

Yanamudra et al (1) describe two patients with tuberculosis of the breast – the first of which presented as mastitis and the second with a breast lump. Both patients were diagnosed on the basis of acid-fast bacilli on histopathological examination. Azarkar et al (2) reported a patient presenting with a breast abscess. This patient underwent surgical resection after fine needle aspiration for cytology failed to make a diagnosis. Haque et al (3) report a patient

similar to ours who presented with an ulcerating mass. Again, imaging and FNAC failed to reach a definitive diagnosis, and surgical excision finally confirmed tuberculosis of the breast.

The 'triple assessment' of any breast lump is a well established process to aid in the effective diagnosis of breast cancer (4). It is only after having assessed a patient clinically, imaging the lump appropriately and subjecting it to cytological or histological analysis that one can confidently diagnose or exclude breast cancer. Furthermore in the era of endocrine treatment of breast cancer, characteristics of tumour biology can also be learned this way.

Failure to achieve histopathological diagnosis and 'presumptive diagnosis' can lead to the mismanagement of potentially life threatening conditions and amounts to medical negligence.

There are many pathologies – both infective and otherwise – that can present masquerading as fungating breast tumour. It is only by embarking on triple assessment in the management of every breast lump that one will avoid potentially harmful treatments.

In this case the patient was given unnecessary chemotherapeutic agents with profound toxic side effects, instead of the correct anti-tuberculosis drug regimen, which was subsequently administered.

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