

Case Report

Recurrent breast abscess due to *Salmonella paratyphi A*: an unusual case

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ABSTRACT

Bacterial mastitis is the most common variety of mastitis and is often caused by *Staphylococcus aureus*. Chronic mastitis is usually seen as a complication of tuberculosis & syphilis. A 31-year-old female presented with lump in the right breast for the past two years with pain for the past 15 days and discharge for the past two to three days. On examination, the lump was measured and was approximately 4x4 cm in size with a discharging sinus just lateral to the areola. No regional lymphadenopathy was noticed. A clinical diagnosis of "Lump in the right breast" with sinus probably due to tuberculosis was made. The lump had been excised surgically. *Salmonella paratyphi A* was isolated after repeated culture. She had responded to ceftriaxone, hence, unnecessary use of anti-tubercular drugs could be avoided. In chronic mastitis and breast abscess *Salmonella* species should be considered as one of the etiological agents.

Keywords: *Salmonella*, Breast abscess, Mastitis

INTRODUCTION

Bacterial mastitis, often caused by *Staphylococcus aureus* is the most common variety of mastitis in lactating and pregnant woman. Chronic mastitis is usually caused by tuberculosis & syphilis.¹ Breast abscess due to *S. paratyphi A* infection is rare sequelae. *Salmonellae* are gram-negative bacilli that belong to the Enterobacteriaceae family. Disease caused by *Salmonella* organisms can be divided into 2 categories: typhoidal and non-typhoidal. The reservoir for typhoidal disease is human, but non-typhoidal salmonellae are widely distributed among animals. In humans, nontyphoidal *Salmonella* infections are most often associated with food products; the rest is nosocomial infections or is acquired from pets.²

Here, we report a case of breast abscess due to *S. paratyphi A* in non-lactating woman. It highlights the fact

that *Salmonella* spp. should be included in differential diagnosis of abscesses in individuals coming from endemic areas & should be treated accordingly.

CASE REPORT

A 31 year-old female presented with lump in the right breast at right infra-alveolar region for the past two months with pain for the past 15 days with purulent discharge. She was non lactating and non-pregnant. There was no history of recently having fever. She had history of lump in breast on opposite side breast when she was lactating 5 years back. Details of it could not find out as no documentation was available with patient. There was no history of diabetes mellitus, hypertension, bronchial asthma and tuberculosis. The patient was not immunocompromised. On examination, the lump measured approximately 4x4 cm in size with axillary lymphadenopathy was noticed. A clinical diagnosis of

“Lump in the right breast” was made. Pus from the lump was sent in microbiology laboratory. Gram stain revealed gram negative bacilli with plenty of pus cells. Salmonella paratyphi A was isolated in culture, was confirmed by slide agglutination test by using O₂ & Ha antisera. It was sensitive to amikacin, chloramphenicol cefotaxime, ciprofloxacin, cotrimoxazole, imipenem, ofloxacin, gentamycin, doxycycline, tazobactam & was resistant to nalidixic acid. Blood & stool culture revealed no growth. Widal test TO, TH, AH, BH titer was <1:30. Her Hemogram was normal (Hb 10.8 g/dl, TLC 16100/mm³) and biochemistry values were also within normal limit. She had been treated with amoxicillin clavulonic acid combination previously suspecting common pathogen of breast abscess like Staphylococcus aureus. After receiving microbiology reports, she was then shifted to oral cefotaxime. After treatment the second sample for culture was sent & there was no growth of the organisms. It is interesting that neither a trauma history nor a positive blood culture result could be obtained in this patient.

After two months, the patient again visited to OPD with complains of painful lump with pus discharge from right breast with same presentation. The pus sample was sent for AFB culture. It was also cultured on blood agar & Mac Conkeys medium. Over again Salmonella paratyphi A was isolated. Zeihl-Neelsen stain revealed no acid fast bacilli and there was no acid fast bacilli grown after 8 weeks on conventional LJ medium. The patient was treated with prolonged therapy of injectable cefotaxime & patient responded well.

DISCUSSION

Salmonella mastitis constitutes an uncommon manifestation of focal salmonellosis, particularly occurring in immunocompetent patients. Salmonella is unusual cause of breast abscess though it is reported from various tissue sites.³ The pathogenesis of abscess formation is not well established. The possible causes may be infective bile from carriers, hematogenous spread from distant site, and lymphatic spread from gastrointestinal tract. Bilateral breast abscesses due to Salmonella typhi is a common presentation⁴ After literature search, cases of breast abscess due to Salmonella species are very few. Amongst the species Salmonella typhi is more commonly reported than non-typhoidal salmonella. In females, the incidence was 0.9%.⁵ Other authors have also reported similar cases of unilateral breast abscess due to Salmonella typhi.^{6,7} Other non-typhoidal salmonellae have also been associated with cases of breast abscess. Razeq et al.⁸ and Edelstein et al.⁹ Siddesh A et al. reported the case of breast abscess due to Salmonella paratyphi A.¹⁰

In this case the patient was having recurrent breast abscess. Firstly in left breast but could not find the history. Later on after 5 years, Salmonella paratyphi A was isolated from abscess in left breast. In spite of getting the oral antibiotics treatment for 2 weeks and after

negative culture report, the same organism was isolated after the gap of 2 months. *In vitro* the organism was sensitive to most of the antibiotic. Why the patient was not responding to the antibiotics. If drug failure was due to poor penetration or inadequate drugs, is the matter of research. Is it failure of oral antibiotic therapy or whether the focus of infection could not be detached? Fernando et al. studied the case of recurrent breast abscess due to Salmonella paratyphi A with oral antibiotic failure.¹¹ There was no history of trauma, recent lactation or recent fever and patient was infected recurrently. Any breast abscess in a non-lactating female with or without history of typhoid fever in the recent past and no other predisposing factors must be evaluated, keeping the possibility of a Salmonella breast abscess in mind. Secondly when she visited, one of the differential diagnoses was tuberculous abscess as had chronic history. Microbiological culture and sensitivity report supported in the management of the case. With culture report, unnecessary use of anti-tubercular drug could be avoided.

To differentiate between an inflammatory or infectious lesion and a noninfectious lesion of the breast, especially in the non-lactating breast, may be challenging. A focal Salmonella infection involving the breast must be recognized as a rare differential diagnosis for breast malignancy. Any breast abscess in a non-lactating female with a history of typhoid fever in the recent past and no other predisposing factors must be evaluated, keeping the possibility of a Salmonella breast abscess in mind. Also, a combination of medical and surgical management helps in such a case when supported by a microbiological culture and sensitivity report.

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