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Case Report

A RARE CASE OF BREAST ABSCESS DUE TO SALMONELLA TYPHI

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ABSTRACT
Breast abscess is a common clinical condition in the reproductive age group and predominantly caused by gram positive cocci and anaerobes. The incidence of breast abscess in a patient with typhoid is 0.3%-0.9% in females. Here we report a 60 year old diabetic female admitted with history of fever of 10 days duration followed by pain and lump in the right breast for the past two days. She gave no history of taking any antibiotics. On admission she was afebrile, a lump of size 7× 5 cm in the upper outer quadrant, firm in consistency. No signs of inflammation were detected. Ultrasonagram revealed right breast abscess. Incision and drainage was done and pus sent for culture & sensitivity. Salmonella typhi was isolated as the only infective agent from the lesion which was sensitive to ampicillin-sulbactum, amikacin. The patient was evaluated for evidence of systemic typhoid which came as negative (widal and Blood culture). The patient recovered completely with drainage under antibiotic cover. The case is being presented for its rarity.

Keywords: *Breast Abscess, Salmonella Typhi, Widal Test, Typhoid Fever*

INTRODUCTION
Enteric fever is endemic in developing countries such as India where sanitary conditions and potable water is not accessible to all. Patients typically present at the end of the first week after the onset of symptoms with fever, influenza-like symptoms with a dull frontal headache, malaise, etc., but with few physical signs. A coated tongue, tender abdomen, hepatomegaly, and splenomegaly are common. A relative bradycardia is also common in typhoid. Blanching erythematous maculopapular lesions commonly called 'rose spots' are reported in 5–30% of cases (Parry *et al.,* 2002). If untreated or where the implicated organism is resistant to the treatment being given, there may be seeding of salmonellae in various organs of the body (Rodriguez *et al.,* 1998). Such patients usually present with abscess formation and fever. There have been occasional reports on the occurrence of abscesses due to *Salmonella* spp., such as liver (Ciraj *et al.,* 2001), splenic (Duggal *et al.,* 2008), and anterior abdominal wall (Thakur *et al.,* 2010), but unilateral breast abscesses are a rare presentation. We present here a rare case of an old nonlactating, immunocompetent female who presented with unilateral breast abscesses due to *Salmonella typhi*. We also review the literature on cases of breast abscesses due to *Salmonella typhi*.

CASES
A 60 yr old female presented with complaints of pain and swelling of Right breast for 10 days duration. She had low grade fever without chills and rigor for 2 weeks back lasting for 3 days which was subsided on its own without any antibiotics. There was no history of Right nipple discharge or nipple retraction. There was no history of Right axillary swelling. The patient was a known Diabetes mellitus on irregular treatment. On examination the general condition of the patient was fair and Afebrile. She was not anaemic and adequately hydrated. On local Examination of right Breast revealed a firm swelling of size 5x4 cms occupied in the upper outer quadrant and skin over the swelling was erythematous. The Right breast swelling was warm and tender which had no fixation to the underlying structures. Right nipple and areola complex appeared normal. There was no regional or generalized lymphadenopathy. Left breast and axilla were normal. Other systems were normal. Investigations: CBC- Hb-12.6 g/dl, TC-12000 cells/cumm, DC-Neutrophil- 68 %, Lymphocytes-24%, Basophil-2%, Renal function test- Urea- 26.6 mg/dl, Creatinine-0.8 mg/dl, Sodium-134 mEq/dl, potassium-4.2 Meq/dl, Choloride -101 mEq/dl, Urine Albumin and sugar and deposits- nil. Blood sugar-205 mg/dl. Chest x ray PA view revealed normal study. Electrocardiography was within normal limits. Utrasonogram (USG) of Right Breast revealed there was

an irregular and ill defined hypo echoic lesion of size 1.5x1.3cms in the upper outer quadrant. Under General Anaesthesia and the patient in supine position initially diagnostic aspiration done which revealed pus, hence it was followed by Incision &drainage. About 15 ml of pus drained and remaining necrotic material scraped out. The Scraping from the wall of the abscess cavity was sent for Histopathological examination and pus was sent for culture and sensitivity. A Tube drain was kept and wound dressing done regularly. The Right breast Wound healed in 10 days duration. Histopathological report of Scraping from the abscess cavity wall was Consistent with features of suppurative lesion. The surprise came off in the form pus culture and sensitivity report which revealed salmonella typhi grown in culture and sensitive to the following antibiotics Amikacin/Ampicilinsulbactam/Cefepime/Ceftazidime/Pipataz/Imipenam. No other organisms grown in culture (Figure 1.1). In hind sight pt was investigated for systemic typhoid came as follows. Blood Widal test reported as negative (o typhi 1 in 40 and H typhi 1 in 80). Blood Culture and sensitivity reported as Negative. Peripheral smear study revealed Normo cytic, Normo chromic type. Stool for typhoid bacillus reported as Negative.

Figure 1.1: Shows growth of the salmonella colonies in Macconkey agar plate

DISCUSSION

Salmonella typhi bacteremia is occasionally associated with extraintestinal disease (Rodriguez *et al.*, 1998). It is capable of forming abscesses in various organs such as liver, subcutaneous tissue, muscles, and skin. 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* are a rare presentation (Singh *et al.*, 2009). The present case was associated with a detectable bacteremia in the past. The occurrence of breast abscesses in patients with typhoid has been shown to be around 0.3% by Klose and Sebening (1930) and 0.5% by Pezinski (1937) in a study of 1 196 cases of typhoid over a period of 2 years. In females, the incidence was 0.9% (Barrett and MacDermot, 1972). Other authors have also reported similar cases of unilateral breast abscess due to *Salmonella typhi* (Delori *et al.*, 2007; Mahajan *et al.*, 2007). Other nontyphoidal salmonellae have also been associated with cases of breast abscess. Razeq *et al.*, (2000) and Edelstein *et al.*, (1993) had isolated *Salmonella* Landweisser and *Salmonella* serogroup B in breast abscess, respectively. In a recently published study from Kuwait, a very rare serotype, *Salmonella* enterica serotype Poona, was isolated from a case of breast abscess that was associated with

erythema nodosum (Al Benwan *et al.*, 2010). Neonatal mastitis due to *Salmonella* spp. has also been published (Nelson, 1973). Kumar (1998) reported a multidrug-resistant typhoid with breast abscess. On analyzing the available literature on breast abscesses due to *Salmonella* spp., we found that most of the patients were immunocompetent females between the ages of 23 and 45 years. They were nonlactating. However, no common predisposing factors could be elucidated. The following are associated with the salmonella species (Delori *et al.*, 2007).

a) Typhoid fever and its complications. b) Gastroenteritis.c) Septicemia in liver, spleen, brain, parotid, etc.. d) Cholecystitis and carrier stage e) Venous thrombosis f) Cystitis, bacilluria, epididymo orchitis g) Osteomyelitis In Breast abscess there is less possibility of isolating salmonellae by doing culture of any one of the following methods (Razeq *et al.*, 2000). 1) Mac Conkey & Deoxycholate citrate media (DCM). 2) Wilson & Blair bismuth sulphite medium 3) Selenite F broth media 4) Tetrathionate broth.

Conclusion

Any breast abscess in a nonlactating 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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