Online Journal of Health and Allied Sciences
Peer Reviewed, Open Access, Free Online Journal
Published Quarterly : Mangalore, South India : ISSN 0972-5997
Volume 11, Issue 4; Oct-Dec 2012

Case Report:

Cellulitis Due to *Salmonella infantis*.

Authors
Satish R Patil, Associate Professor of Microbiology,
Kshirsagar AY, Professor of Surgery,
Ghorpade MV, Professor of Microbiology,
Shinde RV, Assistant Professor of Microbiology,
Krishna Institute of Medical Sciences, Deemed University, Malkapur, Karad - 415 110, Satara, Maharashtra, India.

Address for Correspondence
Dr. Satish R Patil,
Associate Professor of Microbiology, Krishna Institute of Medical Sciences,
Deemed University, Malkapur,
Karad - 415 110, Satara,
Maharashtra, India.
E-mail: patil.drsatish@gmail.com

Citation
Patil SR, Kshirsagar AY, Ghorpade MV, Shinde RV. Cellulitis Due to *Salmonella infantis*. *Online J Health Allied Scs.* 2012;11(4):12. Available at URL:http://www.ojhas.org/issue44/2012-4-12.html

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Submitted: Dec 3, 2012; Accepted: Jan 7, 2013; Published: Jan 25, 2013

Abstract: Bacteria of the genus Salmonella are highly adapted for the growth in both humans and animals and cause a wide spectrum of disease. The growth of Serotypes *S. typhi* and *S. paratyphi* is restricted to human hosts, in whom these organisms cause enteric (typhoid) fever. The remaining Serotypes (non typhoidal Salmonella or NTS) can colonize the gastrointestinal tracts of the broad range of animals, including mammals, reptiles, birds and insects. The usual clinical presentation of non-typhoidal salmonellae (NTS) infection is self limited gastroenteritis; however bacteremia and focal extra intestinal infection may occur. However salmonella localization to the skin presenting as cutaneous ulceration is regarded as a rare event. Rates of morbidity and mortality associated with NTS are highest among the elderly, infants, and immunocompromised individuals, including those with hemoglobinopathies, HIV infection, or infections that cause blockade of the reticuloendothelial system. We isolated *S. infantis* in 50 years old man with left leg cellulitis. The serotype was confirmed at Central Research Institute, Kasauli.
Key Words: *Salmonella infantis*; Cutaneous infection.

Introduction

Non-typhoidal salmonellosis is an important enteric infection in humans, particularly in neonates and younger children.[1] Bacteria of the genus of salmonella can produce a wide of infection in human including gastroenteritis typhoid fever, bacteria and localized infection. Skin ulceration and soft tissue infection due to cutaneous and localization of salmonella is regarded as an exceeding rare event. Non typhoidal infection in infants typically causes self limiting diarrhoea, it occasionally result in extra intestinal infection such as bacteremia with or without localized infection. Non typhoid salmonella usually occur in elderly or very young children and in immunocompromised subject. Although reports of ESBLs associated with Salmonella are relatively rare compared to those for other species in the family Enterobacteriaceae, the number of reported cases in this organism has been increasing in recent years.[2]

Here we report a rare case of cellulitis due to *Salmonella infantis* in a non immunocompromised individual.

Case Report:

50 years old otherwise healthy farmer man was admitted with diagnosis of left leg cellulitis. He had history of fever and painful multiple ulcers on left lower leg since 3 days which progressed to cellulitis evolving into cutaneous gangrene. Systemic examination was found to be normal. All routine investigation were normal except, Hb was 9.0 gm/dl. Peripheral blood count 22000/cumm with 86% segmented neutrophil 10% lymphocyte.

X-ray picture of involved leg showed no bone or periosteal abnormalities. Chest x-ray was normal.

Patient underwent surgical debridement of the gangrenous patches and pus culture was done. On MacConkey agar it grew nonlactose fermenting colonies. It was gram negative motile organism.Catalase positive, oxidase negative and reduced nitrate. Triple sugar iron medium showed alkaline slant with acidic butt with H_2S production. Indole test was negative, methyl red positive, citrate was utilized. Organism agglutinated with poly O (A-E) antisera.The isolate was reported as *Salmonella species*. The isolate was sent to Central Research Institute, Kasauli (H.P.) for further identification & was identified as *S. infantis.* Patient being a farmer, possible contact with animals might have led to the unusual salmonella infection.

Antibiotic susceptibility of organism was tested by standard disk diffusion method as per Clinical Laboratory Standards

Institute guidelines. The isolate was sensitive to tetracycline (30µg), amikacin (30µg), co-trimoxazole(1.23/23.7µg), and netilmycin (30µg). And isolate was resistant to cefoxitin(30µg), ticarcillin(75 µg), cefoperrazone(75 µg), ceftizoxime(30µg), ceftazidime(30µg), coamoxyclav(20/10µg), gentamicin(10µg), ciprofloxacin(5µg), cephalexin(30µg), ceftriaxone(30µg), carbenicillin(100µg), piperacillin(100 µg), cefuroxime(30µg) and ofloxacin(5 µg). The strain was positive for ESBL tested by disk potentiation method using ceftazidime(30µg) and ceftazidime-clavulanic acid disks (30/10 µg).

Patient was kept on antibiotic according to sensitivity report and showed no signs of further spread of wound infection or systemic deterioration.

Patient underwent split thickness skin grafting once the wound had well granulated and was discharged having made full recovery.

Discussion:

Necrotizing fasciitis is characterized by widespread necrosis of fascia and deeper subcutaneous tissues with initial sparing of skin and muscles. A mixed pattern of organism, aerobic streptococci, bacteroids, staphylococci, coliform, E.coli and proteus plays a role in infectious process but salmonella localization to the skin presenting as cutaneous ulceration is regarded as rare event[3]

Non-typhiodal salmonella like augustenberg panama, dublin have been reported as a cause of cutaneous infection.[4,5]

Awareness of the likelihood of uncommon salmonella causing human infection should prompt identification of all salmonella strains. Careful attention needs to be paid to having potential to acquire ESBL enzyme,[6] as they are easily transmitted among members of enterobacteriaceae, thus facilitating the dissemination of resistance not only to β lactams but also to other commonly used antibiotics such as quinolones and aminoglycosides. ESBL-producing salmonella isolates resistant to several antibiotic agents, especially 3rd generation cephalosporins,are increasingly reported.

Pre operative photograph of the case of cellulitis.

References:

1. Bhat P, Macaden R. Outbreaks of gastroenteritis due to multidrug resistant Salmonella typhimurium phage type 66/122/ T in Bangalore. *Indian J Med Res.* 1983;78:458–458.
2. Kocagoz S, Budak F, Gur D. Evaluation of a chlorogenic medium for rapid detection of extended spectrum beta-lactamases producing Salmonella spp. *Indian J Med Res.* 2006;124:443–446.
3. Patino JF, Castro D,Valencia A, Morales P. Necrotizing soft tissue lesion after a volcanic catauysm. *World J Surg* 1991;15:240–247.
4. Lin WJ, Wang CC, Cheng SN, Lo WT, Hung CH. Hand abscess, phlebitis, and bacteremia due to Salmonella enterica serotype Augustenborg. *J Microbiol Immunol Infect.* 2006 Dec;39(6):519-522.
5. Carswell W, Magrath IT. Skin ulceration caused by Salmonella dublin. *Br. Med J* 1973;1:331–332.
6. Kulkarni RD, Ajantha GS, Shubhada C, Jain P. Isolation of S.enterica serotype isangi from a suspected case of enteric encephalopathy. *Indian Jr Of Med Micro.* 2009;27:65-77.