

**Neonatal Polyarthritis Caused by *Salmonella bareilly***

Salmonella infections in the newborn carry special significance since the attack rate, morbidity and mortality in them is higher as compared to older children and adults. *S. typhimurium* is incriminated in majority of neonates; the others being *S. anatum*, *S. newport*, *S. eranienberg*, *S. weltevreden*, *S. alachua* and *S. sefteberg* (1). However, isolation of *S. bareilly* from neonates has been rare and far between(2,3).

A 10 day old male child was admitted to our neonatal unit with multifocal clonic seizures. The child was born normally at term and weighed 3.0 kg. He was being fed on cow's milk at home. On admission blood glucose, sodium, potassium and acid-base status were normal. CSF was within normal limits and blood culture was sterile. Total serum calcium was 4.4 mg/dl and ionic calcium was 0.5 mmol/litre. Child was put on continuous infusion of calcium gluconate (75 mg/kg of elemental calcium per day). Seizures were controlled and serum calcium reverted to normal by the 3rd day. Maintenance calcium was started after 5 days of therapeutic dosages. The child remained well for the next 48 hours.

Seven days after admission, the boy started having fever. A complete sepsis screen was performed. On 3rd day of fever, swelling developed over left knee joint with local signs of inflammation and restriction of movement. Next day, swelling developed over the left sternoclavicular joint. During the subsequent course of illness, right knee joint and right sternoclavicular joints were

involved. This was confirmed by radiography and pus aspiration from the joints. Bilateral knee joint arthrotomy was performed. Cultures of blood and pus from various joints revealed *Salmonella bareilly* which was sensitive to chloromycetin and ciprofloxacin but resistant to ampicillin, kanamycin, gentamicin, cephalixin, netilmicin and cefotaxime. The child was isolated and chloromycetin in a dose of 25 mg/kg/day intravenously was started and continued for three weeks without any side effects. Fever subsided on 5th day and the child completely recovered without sequelae. Rectal swabs of both baby and mother were also positive for *Salmonella bareilly*. *S. bareilly* was serotyped at the National Salmonella and Escherichia Centre, Central Research Institute, Kasauli and the strain was identified as 6,7: Y : 1,5.

*S. bareilly* infection though predominantly zoonotic can affect man through contaminated feed and water. In one of the outbreaks of *S. bareilly* in a maternity hospital in Sri Lanka, the source of infection was traced to the piped water supply(3). In our case, mother was identified as an asymptomatic carrier, who might have been the source of infection for her baby.

This infant was admitted with hypocalcemia (cow milk induced), which was treated successfully but during convalescence developed salmonellosis with multiple pyogenic arthritis. Most probably, this child was admitted in the incubation period of salmonellosis or contracted it from the mother during hospitalization, as the incubation period of salmonellosis varies widely between 6 to 60 days. A survey of other admitted patients and environment failed to isolate the organism; further eliminating the probability of a nosocomial infection.

The most common symptoms in neonatal salmonellosis are diarrhea followed by fever and vomiting. The incidence of septicemia is comparatively low (5%) and arthritis is virtually non-existent in the new-borns (4). In the present case, *S. bareilly* was isolated from stool, blood and joint aspirates which suggests fulminant septicemia with arthritis. To the best of our knowledge this is for the first time that multiple joint involvement in a neonate with *S. bareilly* sepsis is being described. Involvement of bilateral sternoclavicular joint was yet another unique feature of the case which prompted this report.

**Piyush Gupta,  
Vibha Talwar,  
M.M.A. Faridi,  
M. Mathur,  
Manju Mahajan,**

*Departments of Pediatrics and Microbiology,  
U.C.M.S and G.T.B. Hospital*

*Delhi 110 095.*

#### REFERENCES

1. Gupta P, Ramachandran VG, Sharma PP, Faridi MMA, Talwar V, Mathur M. *Salmonella senftenberg* septicemia: A nursery outbreak. Indian pediatr 1993, 30: 514- 516.
2. Aggarwal P, Sarkar R, Singh M, Grover BD, Anand BR, Raichowdhuri AN. *Salmonella bareilly* infection in a pediatric hospital of New Delhi. Indian J Med Res 1983, 78: 22-25.
3. Mendis NMP, Dela Mette PN, Gunatillaka PDP, Nagratnam W. Protracted infection with *Salmonella bareilly* in a maternity hospital, J Trop Med Hyg 1976, 79:142-150.
4. Jain SC, Bhakoo ON. Salmonella infection in the newborn: A review. Indian Pediatr 1979,16: 629-635.