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## A healthy child with salmonella septic arthritis of shoulder: An unusual cause a case report

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### Abstract

**Background:** Septic Arthritis occurring in infants necessitates early diagnosis and management to prevent irreversible joint destruction. Although Staphylococcus aureus is the commonest cause of pyogenic Septic Arthritis, it is important to identify the specific pathogen in order to start appropriate antibiotics. Salmonella induced Septic Arthritis is relatively rare in an immunocompetent child.

**Case presentation:** In this case report we would like to present a case of salmonella induced Septic arthritis in an otherwise healthy one year old infant.

**Conclusion:** Salmonella induced Septic arthritis cannot be ruled out especially in places where Enteric fever is endemic.

**Keywords:** Salmonella, septic arthritis, infant

### Introduction

Septic arthritis in a child less than 2 years of age can lead to irreversible damage to the joint [1]. Septic arthritis can involve any joint; But more commonly affects hip and knee. Shoulder involvement accounts for about 3 to 5% of the cases [2]. Septic arthritis is generally caused by Staphylococcus aureus and Haemophilus influenza. Not often we come across salmonella induced septic arthritis, more over in an immuno competent child Salmonella causing septic arthritis is relatively rare. Salmonella typhimurium is usually the culprit among Salmonella induced septic arthritis [1]. Here, we would like to discuss a case of salmonella septic arthritis in an otherwise healthy child.

### Case history

One year old girl was referred with complaints of fever and irritability since 7 days. On examination, she was found to have swelling and tenderness over right shoulder. The X-ray of right shoulder showed widening of Joint space and minimal lytic lesion in metaphyseal area of proximal humerus. The Blood picture showed elevated Total count with leucocytosis and increased ESR. There was no growth in blood culture and no haemoglobinopathies was detected. Ultrasonogram of right shoulder showed picture of deltoid abscess. Patient was treated with IV ceftriaxone 50mg/kg/dose for 7 days. Debridement of right shoulder and metaphyseal drilling was done. Intraoperatively purulent material was expressed from joint during Arthrotomy and was sent for microscopic examination and culture sensitivity. Postoperatively, pus culture confirmed presence of salmonella typhimurium and was continued by oral antibiotic.



**Fig 1:** The Blood picture showed elevated Total count with leucocytosis and increased ESR

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## Discussion

When septic arthritis affects young children and infants, Haematogenous mode of spread is the commonest route of infection. It mainly occurs due to seeding from the Transphyseal capillaries<sup>[1]</sup>. It is commonly seen in individuals who are suffering from chronic debilitating diseases and haemoglobinopathies<sup>[3]</sup>. Blood reports will guides us in detecting the presence of infection; However microscopic examination and culture sensitivity stands as a gold standard modality in detecting the organism. Blood culture reports will helps us to rule out septicemia. Histopathological examination will also sent for detecting other pathologies like malignancies. Radiographs can be normal in early stage of the disease, hence with strong clinical suspicion ultrasonography and MRI might help us in providing the details for further management. Blantyre Septic Joint Score (BSJS) and Patersons are various protocol that can be followed to manage septic arthritis<sup>[4]</sup>. Arthrotomy of the involved joint and sending the infected material for microbiological examination and starting appropriate antibiotics stands as a mainstay in treatment.

Since enteric fever is endemic in India, Salmonella as a causative agent for septic arthritis is always considered a possibility<sup>[3-5-6]</sup>. This case report is to emphasis the possibility of salmonella infection of shoulder joint in immuno competent infant. Work up and management of child will be done like any other septic arthritis. Arthrotomy and sending infective tissue or fluid for microbiological examination and obtaining culture report stands as a gold standard modality. Specific antibiotic therapy has to be initiated after obtaining antibiotic sensitivity report.

## Conclusion

Salmonella induced septic arthritis should always be considered in an otherwise healthy child, especially in places where enteric fever is endemic. Hence it is prudent to identify the pathogen and start on targeted Antibiotic therapy, thereby improving the outcome.

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