The Frequency of Multifocal Disease and Pyogenic Hip Arthritis in Neonates with Osteomyelitis

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Abstract

There has been limited literature on osteoarticular infections in neonates and infants. In the past twenty years, MRSA infections have been reported as the common site of high prevalence of osteoarticular infection in neonates and infants. In 2017, a review of recent cases of neonatal osteomyelitis and septic arthritis cases were identified in the medical record and NICU registries at Cohen Children's Medical Center, New Hyde Park, NY. The diagnosis of osteoarticular infection should be suspected of having multiple sites of involvement. The hip joint is infected in a relatively high proportion of babies; in view of the importance of early surgical drainage of pyogenic arthritis, this study intends to provide a review of recent cases of neonatal osteomyelitis and septic arthritis to provide contemporary data on the epidemiology, microbiology, prevalence of multi-bone and contiguous joint involvement, and proportion of cases with pyogenic arthritis of the hip.

Background

Osteomyelitis and septic arthritis are uncommon but serious infections in neonates in intensive care units. There is limited literature on neonatal osteoarticular infections during the past 20 years, and a period during which there was an emergence of methicillin-resistant Staphylococcus aureus (MRSA) infection.

Objectives

To describe a case series of neonatal osteoarticular infections -- emphasis on microbiology, prevalence of multi-bone & joint involvement, & proportion of cases with hip pyogenic arthritis.

Hypothesis

In neonatal bone/joint infection, both multi-focal disease and pyogenic arthritis of the hip is common.

Results

- N = 30
- Demographics
  - Gestational Age
    - Median: 28 weeks; range: 23.5-39.3 weeks
    - 80% were premature
    - Median age at diagnosis: 33.5 d; range: 11-175 d
- Clinical Findings
  - Localized findings
    - Erythema (66%), Swelling (60%)
  - Systemic findings
    - Most common systemic finding: apnea (53%)
    - Bone and joint involvement
      - Osteomyelitis only: 21 cases (70%)
      - Pyogenic Arthritis: 1 case (3%)
      - Both osteomyelitis + pyogenic arthritis: 8 cases (27%)
      - Multiple sites occurred in 28% (Figure 1)
- Hip Arthritis
  - Observed in 5 of 30 cases (16.6%)
  - Presentation of infection in 3 babies
  - Diagnosed > 48 hours after initial presentation in 2
  - Ultrasound of the hip performed on 12 babies (40%)