A 10-Week-Old Female with Fever and an Inability to Move Her Left Leg

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A previously healthy 10-week-old female was admitted to our hospital with a fever and an inability to move her left leg. The mother also noted a decrease in the child’s breast-feeding in the 3 days prior to presentation. Although there was no history of major trauma, it was revealed that her brother had picked her up roughly by her leg 5 days before her admission. On initial physical examination, she had increased capillary refill and tachycardia with toxic appearance. Flexion-adduction and internal rotation posture, and warmth, tenderness, and limitation of movement of the left hip joint were detected. Her laboratory findings were as follows: white blood cell count of 11700/mm³, erythrocyte sedimentation rate of 87 mm/h, and C-reactive protein level of 86 mg/L.

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A number of risk factors have been identified for the development of pneumococcal infections and related complications such as PM. These include age (older than 65 years or younger than 2 years), chronic heart, lung, kidney, and liver diseases; diabetes mellitus; cerebrospinal fluid leaks; coarctation implants; some hematological diseases and malignancies; functional or anatomic asplenia; HIV infection; use of immunosuppressive drugs (including steroids); and solid organ transplantation or hypocomplementemia. In an at-risk group, gram-negative enteric organisms, anaerobes, and fungi also can be causative pathogens for PM. Diagnosis of PM requires both radiologic evidence and positive culture of blood, muscle aspirate, or other fluid. PM can be classified into three stages. In the early stage, treatment with antibiotics alone can be effective for controlling local infection and does not require surgery. Osteomyelitis, septic arthritis, fever of unknown origin, cellulitis, thrombophlebitis, and appendicitis should be kept in mind in the differential diagnosis of joint pain or muscle pain.

Our 10-week-old infant had received a 13-valent pneumococcal conjugate vaccine (PCV-13) 15 days before admission (PCV-13 includes type 5). The incidence of invasive pneumococcal diseases in children younger than age 5 years has decreased dramatically with routine use of PCV. Bacteremia without a known site of infection is the most common invasive clinical presentation of pneumococcal infection among children age 2 years and younger, and it accounts for approximately 70% of invasive diseases in this age group. Before routine use of PCV, the burden of pneumococcal diseases among children younger than age 5 years was significant. Complete immune response requires at least three dosages of vaccine. Due to insufficient maturity of the immune system in infancy and lack of a full dose of pneumococcal vaccination, infants are more prone to invasive pneumococcal infections.

In conclusion, PM should be considered in the differential diagnosis of pain and restriction in movement of the hip joint in a child, especially in a child with a toxic appearance. Moreover, PM should also be kept in mind if a child with pneumococcal bacteremia has pain and limitation of hip joint on physical examination, and a child with these symptoms should be evaluated immediately with imaging techniques.

REFERENCES