RMSF is considered the best treatment for infectious conditions and can be difficult to diagnose (Box), even for physicians familiar with the disease. The majority of patients do not have the classic RMSF triad of fever, rash, and history of tick bite on their first visit for medical care; often the rash appears several days after onset of fever and can evolve to become petechial. The absence of known tick bite is common and should not dissuade clinicians from suspecting RMSF. None of the patients in this report recalled a tick bite before illness onset, although all lived near wooded or grassy areas where ticks might have been present.

The infection can have a rapid course; 50% of RMSF deaths occur within 9 days of illness onset. Doxycycline therapy is considered the best treatment for RMSF in both adults and pediatric patients and is most successful when initiated within 5 days of illness onset.

Delay of doxycycline therapy can increase the risk for severe or fatal outcomes; treatment should never be delayed pending laboratory confirmation. Criteria for diagnosis* of a confirmed infection include the presence of a clinically compatible illness, plus at least one of the following: (1) serologic evidence of a significant change (fourfold increase or greater) in antibody titer reactive with *R. rickettsii* antigens between paired serum specimens, as measured by a standardized assay conducted in a commercial, state, or reference laboratory; (2) demonstration of *R. rickettsii* antigen by IHC in a clinical specimen such as skin biopsy or other tissue; (3) detection of *R. rickettsii* DNA by PCR in a clinical specimen, such as whole blood or tissue; or (4) isolation of *R. rickettsii* from a clinical specimen in cell culture. Probable cases have a clinically compatible illness and serologic evidence of antibodies reactive with *R. rickettsii* in a single serum sample at a titer considered indicative of current or past infection (cutoff titers are determined by individual laboratories). At CDC, reciprocal IFA IgG titers of ≥64 are considered to be evidence of current or past infection.

The most effective measures to reduce the risk for RMSF (particularly in children) are to (1) limit exposure to ticks during periods of peak tick activity (i.e., April-September); (2) inspect the head, body, and clothes for ticks thoroughly after being in wooded or grassy areas, especially along the edges of trails, roads, or yards; and (3) remove attached ticks immediately by grasping them with tweezers or forceps close to the skin and pulling gently with steady pressure. Because rapid laboratory confirmation of RMSF infection is not available, clinicians should consider initiating empiric therapy in patients with a compatible clinical presentation (e.g., fever usually with subsequent development of a macular or petechial rash) and epidemiologic circumstance (e.g., recent recreational or occupational activities during spring and summer months that could have exposed persons to ticks) to reduce morbidity and mortality resulting from delayed diagnosis. As a nationally notifiable disease, all RMSF cases should be reported to state health departments. Additional information about RMSF is available at http://www.cdc.gov/ncidod/dvrd/rmsf/index.htm.

References
7 available


Update: Measles Among Children Adopted From China

As of May 24, 2004, investigators have identified 10 confirmed measles cases associated with adoptees who traveled to the United States from China during March 2004. No cases have been reported since April 18, and all the ill persons have recovered without complications. CDC is now recommending that the temporary suspension of adoptions from the affected orphanage in China be ended and standard adoption procedures be resumed.

The 10 cases included nine imported cases among adopted children aged 12-18 months who acquired their infections while still in China and then traveled to three states (Maryland, New York, and Washington) during March 26-27, and one importation-linked case in a female student aged 19 years from California. The student had close contact with an adoptee aged 18 months during a visit to Washington when the child was infectious with measles. The student had a nonmedical exemption and had not received measles-containing vaccine; upon her return to California, she was quarantined in her off-campus home. She had onset of rash...
14-16 days after contact with the adopted child, and measles was diagnosed. No other cases linked to this outbreak have been identified.

The cases in adoptees were associated with the Zhuzhou Child Welfare Institute in Hunan Province. On May 24, Chinese authorities reported that the last patient with measles at the orphanage had rash onset on April 23, and that the recommended vaccination campaign for all eligible children at the orphanage had been completed. Because no cases of measles were reported from the orphanage during the next 21 days (i.e., one incubation period), the outbreak appears to have been controlled. As a result, CDC is recommending that standard adoption procedures for children from the orphanage be resumed.

Reported by: Div of Global Migration and Quarantine, National Center for Infectious Diseases; Epidemiology and Surveillance Div, National Immunization Program, CDC.

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Kingella kingae is recognized increasingly as a cause of skeletal infections in children.1 Recent studies indicate that direct inoculation of clinical specimens into aerobic blood culture bottles (ABCBs), instead of direct plating of specimens on solid media, might improve recovery of the fastidious bacteria.2,3 Prompted by a report of a possible cluster of osteoarticular infections caused by K. kingae among children, the Infectious Diseases Society of America Emerging Infections Network (IDSA-EIN) surveyed pediatric infectious disease consultants (PIDCs) about their experiences in diagnosing K. kingae and other skeletal infections in children. This report summarizes the findings of that survey, which identified 23 K. kingae pediatric cases and indicated that 35% of responding PIDCs did not use ABCBs in diagnosing skeletal infections. Efforts to increase use of ABCBs among clinicians and laboratories might lead to increased detection of K. kingae cases.

In November 2002, a questionnaire was distributed to PIDCs in IDSA-EIN. This query aimed to (1) identify the diagnostic approaches of PIDCs in evaluating skeletal infections in children and (2) determine the number of cases and types of infections attributed to K. kingae diagnosed by these physicians during June 2001–November 2002. Of 254 PIDCs surveyed, 156 (61%) responded.

During June 2001–November 2002, PIDCs diagnosed skeletal infections, including septic arthritis, osteomyelitis, diskitis, tenosynovitis, and dactylitis, in 1,908 patients aged <5 years. For these cases, 56 (43%) PIDCs reported no organism found in ≤25% of their cases, 43 (33%) in ≤50% of their cases, and 24 (18%) in >50% of their cases. Eighteen (12%) PIDCs diagnosed 23 cases of K. kingae infection: septic arthritis (12), osteomyelitis (nine), endocarditis (one), and bacteremia (one). Median age of patients was 2.3 years (range: 0.5-10.0 years); no K. kingae case clusters were reported. At diagnosis, four persons had upper respiratory tract infections, and one had stomatitis.

When diagnosing skeletal infections, the majority (97 [62%]) of PIDCs requested that specimens be inoculated into ABCBs for some (55 [39%]) or all (42 [27%]) of their cases; 55 (35%) PIDCs never made that request. The most common specimens inoculated into ABCBs were synovial fluid (78 [80%]) and bone aspirate (49 [51%]). Of those using ABCBs, 53 (54%) had been making this request for <5 years. Of all respondents, 89 (57%) were aware that use of ABCBs might improve isolation of this organism and subsequent identification. PIDCs reported several barriers to use of ABCBs in diagnosing skeletal infections, including (1) specimens obtained for diagnosis commonly being taken before consulting PIDCs and (2) laboratories being unwilling to perform requested tests.

This survey identified 23 K. kingae pediatric cases; the majority (91%) of infections were either septic arthritis or osteomyelitis. When diagnosing skeletal infections, 43% of PIDCs reported that no organism was found in <25% of cases; 38% of PIDCs did not use ABCBs for recovery of K. kingae. Several studies have indicated that commercial blood-culture systems improve the recovery of K. kingae from synovial fluid.2,3 Increased use of ABCBs might reveal K. kingae to be a more common cause of skeletal infections. Educational efforts to improve the selection of diagnostic methods for infectious diseases should be targeted not only to infectious disease consultants but also to clinical microbiology laboratory physicians who are most likely to obtain specimens (e.g., orthopedic surgeons for skeletal infections).

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