2. Mediterranean spotted fever

Based on a presumptive diagnosis of Mediterranean spotted fever (MSF), our patient was treated with 100 mg of doxycycline twice daily for 10 days. After 2 days of antibiotic therapy, the fever, rash, and abnormal laboratory results began to improve. The first serologic test results were negative, but 2 weeks later the clinical diagnosis was confirmed by an immunoglobulin G (1:125) and immunoglobulin M (>1:125) test positive for Rickettsia conorii.

Mediterranean spotted fever, also called boutonneuse fever, fièvre boutonneuse, or Marseilles fever, is an acute, febrile, tick-transmitted rickettsiosis caused by R. conorii, an obligate intracellular bacterium. The disease is endemic in many countries surrounding the Mediterranean Sea, so physicians should suspect it in travelers returning from these areas. It is transmitted to humans by the brown dog tick Rhipicephalus sanguineus, which is generally considered to be the most common tick in the Mediterranean area. Diagnosis is based on clinical findings early in the course of the disease; MSF should be suspected in patients presenting with fever of 39.8°C or higher, a so-called tache noire (an eschar that appears at the site of the tick inoculation of rickettsiae), and a nonpruritic maculopapular rash.

Epidemiology

Mediterranean spotted fever affects all races and ages, and the male-to-female ratio is 1:7:1. The disease is widely distributed in India, Africa, Europe, and Middle Eastern areas bordering the Mediterranean, sub-Saharan Africa, and around the Black and Caspian seas. Most cases are diagnosed between June and September (during the reproduction cycle of Rhipicephalus species); however, MSF might be easily misdiagnosed in patients outside the areas of endemcity or during the winter.

Clinical findings

After an incubation period of around 7 days, MSF manifests abruptly with chills, high fever (39°C to 41°C), myalgia, arthralgia, severe headache, and photophobia. Half of patients have a tache noire at the site of the tick inoculation of rickettsiae. Around the third to sixth day of illness, a nonpruritic exanthem (widespread rash) appears, first macular, then maculopapular, and sometimes petechial. In some, the only sign is an isolated lymphadenopathy.

Diagnosis

Diagnosis of rickettsiosis is based on clinical and epidemiologic criteria, such as signs, symptoms, and potential tick exposure. Serologic diagnosis is usually retrospective, as antibodies do not develop until day 7 or later.

Rickettsiae can be identified by immunofluorescence or immunohistochemistry during biopsy of an eschar or a maculopapular lesion. Laboratory workup does not usually contribute to diagnosis in acute patients, although characteristic abnormalities include left shift in white blood cells, relative leukopenia (sometimes leukocytosis) and thrombocytopenia, increased aspartate aminotransferase and lactate dehydrogenase levels, and hyponatremia.

Before onset of the rash, differential diagnoses can include typhoid fever, ehrlichiosis, and many viral infections with similar nonspecific symptoms. In early stages the rash is often confused with a drug rash. Physicians should suspect rickettsiosis in patients returning from nonendemic areas with travel-associated fever. Known history of contact with dogs can be of considerable help.

Treatment

Antibiotics are the mainstay of therapy. Tetracyclines are the drugs of choice and should be prescribed whenever a case of rickettsiosis is suspected. Doxycycline (100 mg twice daily for 10 days) is the most commonly used regimen in adults. Clarithromycin can be a valid alternative to tetracyclines in children, especially for those younger than 8 years of age. The fever decreases and the rash usually disappears after 2 to 4 days of first-line therapy.

Prevention

After exposure to tick-infested areas, individuals should check their entire bodies, including all hairy parts of the body, for tick infestation. A helper should inspect less visible areas, such as the scalp and the back; a mirror can also be used for this purpose. To remove a tick from the skin, grasp the apical part of the tick with forceps and pull it out in an upward motion. There is no need to treat the tick with toxic substances, alcoholic solvents, or hot objects (such as cigarettes). Removal of ticks with the fingernails is not advised, as it could be dangerous if the tick is infested with rickettsiae and is squashed during removal.

Dogs should also be inspected for ticks after each trip to a forest or rural area. The face, the area in and around the ears, the neck, and the space between the toes should be carefully examined. Individual ticks should be removed with forceps. Heavily infested dogs should be treated with an acaricidal shampoo or powder containing carbaryl.

Complications

Prognosis is very good in mild cases. Complications occur mainly in patients who are immunocompromised or elderly and include renal failure (mainly due to renal vasculitis, acute tubular necrosis, or perivascular interstitial glomerulonephritis), respiratory failure, gastrointestinal bleeding, stroke, deep venous thrombosis, arthromyalgia, meningoencephalitis involvement, and myelitis.

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Competing interests

None declared.

References