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Texas Preventable Disease NEWS

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LYME DISEASE IN TEXAS

The clinical spectrum known as Lyme disease was first recognized in 1976 when a cluster of occurred cases among children in Lyme, Connecticut, all of whom had their disease misdiagnosed as juvenile arthritis. Clinical and epidemiologic investigations have shown that the most common feature of Lyme disease is not the arthritis, but an expanding skin lesion called erythema chronicum migrans (ECM). The clustering of cases during the summer and fall and the frequent occurrence of skin lesions on axillary areas of the body led researchers to incriminate Ixodes species ticks as the vector of the disease. In 1982, Dr. Willy Burgdorfer and colleagues reported that the agent of Lyme disease is a spirochete[1], and more recent studies have shown that this spirochete belongs in the genus Borrelia.[2,3] Species of this genus are known to cause tick-borne relapsing fever throughout the United States.

Lyme disease is characterized initially by one or more expanding skin lesions on the body which may cover areas of 12 inches or more. Alternatively, patients may experience a pruritic maculopapular or petechial rash or may experience no rash at all. Accompanying symptoms include fever, chills, headache, stiff neck, arthralgias, and myalgias. Other frequently noted symptoms are lymphadenopathy, hematuria, sore throat, nausea, and drowsiness. Subsequent joint, neurologic, and cardiac manifestations may develop, especially where antibiotic therapy has not been initiated. Penicillin or tetracycline is the drug of choice.

To aid in the diagnosis of this disease, the Texas Department of Health (TDH) laboratory can perform serologic tests using an immunofluorescent antibody (IFA) technique. Preliminary data obtained from the Centers for Disease Control (CDC) in Atlanta suggest that IFA titers of $\geq$ 1:256 can be used as evidence of infection in a patient with compatible symptoms. At this titer, the test is relatively sensitive for patients with complicated Lyme disease. It is less sensitive for patients with ECM alone, so that only 50% of these patients will have elevated titers.[4]

Thus, the diagnosis of Lyme disease is predominantly clinical. According to CDC physician Lauri Markowitz, the current case definition for Lyme disease in endemic areas requires a patient to present with ECM or, without the presence of ECM, an antibody titer of $\geq$ 1:256 and involvement of one or more organ systems (either musculoskeletal, neurological, or cardiac). In nonendemic areas, there must be: 1) ECM with an antibody titer of $\geq$ 1:256; 2) ECM with involvement of at least two of the three organ systems; or 3) no ECM, but an antibody titer of $\geq$ 1:256 and involvement of one of the three organ systems.

Serological evidence indicates that antibodies to Treponema pallidum, the agent of syphilis, may cross-react with the Lyme disease organism. Cross-reactions may be distinguished with the RPR Circle Card Test and MHA-TP Test for syphilis. Positive tests for syphilis indicate that infections are the result of the treponeme, rather than the Lyme disease spirochete. Serological cross-reactions may also be expected

between tick-borne relapsing fever and Lyme disease, as the causative agents are closely related. However, this cross-reaction does not appear to be a problem in patients with leptospirosis which is caused by another spirochete.

Results from a retrospective study using 403 sera, submitted to the TDH laboratory since April, 1984, for the detection of rickettsial antibody, indicate that Lyme disease is a public health problem in Texas. In this study, 9 patients had titers of $\geq$ 1:512, 20 had titers of 1:256, 42 had titers of 1:128, and 55 had titers of 1:64. The remaining 277 patients had titers of $\leq$ 1:64.

Sera reactive for Lyme disease were submitted from throughout the state. The majority of positive sera came from north-central and northeast Texas, areas endemic for Rocky Mountan spotted fever (Public Health Regions 5 and 7). However, the sample was biased in that the majority of the 403 sera that were tested also came from these endemic areas. Most of the patients with reactive sera were children.

At this time, the major tick vector and reservoir of Lyme disease in Texas is not known. Ixodes ticks have been implicated in the transmission of the infection in other areas of the United States. Ixodes scapularis, the blacklegged tick, can be found in Texas. Ticks from three patients with antibody to Lyme disease have been identified. Two were Dermacentor variabilis, the American dog tick, and one was a Rhipicephalus sanguineus nymph, the brown dog tick. To prevent exposure to Lyme disease and other tick-borne illnesses, it is advisable to avoid any tick exposure or to use tick repellents when needed on clothing or exposed skin. Any attached ticks should be removed promptly, using tweezers or rubber gloves, so that skin contact with the tick is avoided.

Questions concerning Lyme disease may be directed to the Bureau of Epidemiology, (512) 458-7328 (STS 824-9328) or to the Medical Serology Branch, Bureau of Laboratories, (512) 458-7514 (STS 824-9514), Texas Department of Health, Austin, Texas.

This report was prepared by Julie Rawlings, MPH, Microbiologist, Bureau of Laboratories, Texas Department of Health, Austin.

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PSITTACOSIS -- HOUSTON, TEXAS

On July 25, 1984, a 52-year-old retired male became ill with a severe headache, fever, chills, nausea, and a mild nonproductive cough. Arthralgias and myalgias were also reported. Chest X-ray revealed a right upper lobe pneumonia. No sputum was obtained for culture. The patient was hospitalized and treated with 2 million units

of intravenous penicillin every few hours and 500 mg of erythromycin every six hours for a period of two days. Upon release from the hospital, the patient was treated with 333 mg of erythromycin every 6 hours for seven days. Complement fixation testing of serum specimens revealed titers to Chlamydia psittaci of 1:64 on July 31 and 1:128 on August 14. It should be noted that the acute serum specimen was drawn six days after onset of symptoms.

An investigation revealed that the patient had purchased eight cockatiels approximately four months prior to the onset of illness. Four of the birds were obtained from a privately owned aviary, two birds were purchased from a local pet shop, and the two remaining birds were purchased at an auction held at a local hotel. Two weeks prior to the onset of symptoms, the patient exchanged one bird for another with the owner of the private aviary. The newly acquired bird subsequently died and was disposed of, making it unavailable for testing.

The remaining birds were placed in quarantine by the Houston City Health Department and 30-days treatment with tetracycline in water was initiated. The private aviary owner was also advised to treat her birds with the same regimen. No related cases were discovered.

This report was prepared by M.A. Scovill, MS, and G.R. Reeve, PhD, Bureau of Epidemiology, City of Houston Health Department, Houston, Texas.

PDN Editorial Note: Psittacosis is a zoonotic disease of psittacine and other birds including parrots, parakeets, canaries, cockatiels, turkeys, chickens, ducks, pigeons, seagulls, and egrets. Most human exposures occur among poultry farm and processing plant workers, persons employed in pet shops, and owners of exotic psittacine birds.

Infected birds may be asymptomatic carriers or acutely ill with symptoms including diarrhea, anorexia, and listlessness. Symptomatic birds experience high mortality. Human infection generally is acquired through inhalation of Chlamydia psittaci in aerosolized fresh or dried bird feces. Symptoms of psittacosis in humans can include sore throat, fever, myalgias, chills, malaise, weakness, photophobia, headache, nonproductive cough, and an atypical pneumonia. In a fatal 1983 case, death due to pneumonia occurred three days after onset of symptoms. Treatment is with antibiotics of the tetracycline group.

During the period 1980-83, an average of eight cases of psittacosis were reported yearly to the Bureau of Epidemiology. The fatal case in 1983 was part of a three case outbreak at a pet shop. The remaining cases were unrelated and all patients recovered. All reported cases were associated with pet and exotic birds; no cases were reported among poultry workers.

Six cases of psittacosis have been reported to date in 1984. Though all have been isolated cases, a seventh presumptive case awaiting serologic confirmation is linked to a reported case through exposure to the same sick parrot.

The diagnosis of psittacosis is confirmed through serology and supporting clinical history and epidemiologic evidence. A single titer of 1:32 (CF) or a four-fold rise in titer between acute and convalescent sera is diagnostic. As timing is critical to demonstration of a four-fold rise in titer, this criterion is not absolute. Bird carcasses or fecal specimens can be tested by the Texas Veterinary Medicine Diagnostic Laboratory, Texas A & M University.

VIRAL ISOLATES FOR SEPTEMBER 1984

VIRUS	COUNTY OF RESIDENCE OF PATIENT(S) (NUMBER OF ISOLATES)
Adenovirus	Bexar(1)
Cytomegalovirus	Bell(2), Dallas(1), Galveston(2), Tarrant(1)
Coxsackie B4	Bell(1)
Echo 9	Bell(1), El Paso(1)
Echo 11	Harris(2)
Echo 16	Bell(1)
Echo 17	Bell(1)
Echo 18	Bell(1)
Enterovirus	El Paso(2), Dallas(2), Hidalgo(1), Tarrant(2), Lubbock(2)
Respiratory Syncytial Virus	Bell(1)
Varicella/Zoster	Bell(1), Galveston(1)
Chylamydia Trach.	Bell(1), Bexar(3), Travis(12)

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