ROCKY MOUNTAIN SPOTTED FEVER: Notes about the Disease

Of all the tick-borne diseases in North Carolina, Rocky Mountain spotted fever (RMsf) exacts the greatest morbidity and mortality. Indeed, although the first studies on this rickettsial disease were conducted and published about a century ago in the Bitter Root Valley area of western Montana (hence its name), NC has led the nation in reported cases for most years during the past several decades. Our state's preeminent position with RMsf relates to the semi-rurality of much of our population (thus increasing the opportunity for tick exposure) and the favorable habitat for the tick vector (American dog tick) here.[1] It is quite possible that the disease existed here even in colonial times.[2]

An additional misleading feature of RMsf's name is the implied universal appearance of a rash in its victims. When present, the maculopapular rash that classically appears on the patient's palms and soles and evolves centripetally into a generalized petechial rash within a few days should alert clinicians to suspect RMsf as a diagnosis. However, a rash may be absent in up to half of the cases. Early doxycycline therapy is quite effective in curing RMsf, and a key factor in the fatalities that still continue to occur with RMsf is delayed antibiotic treatment. Any patient presenting with fever, a headache, and a history of a recent tick-bite (or exposure, since not all tick attachments are noticed) during the warm months in NC should be managed as if he or she has RMsf until proven otherwise. Awaiting confirmation of the diagnosis by serologic testing before initiating treatment may prove quite costly (or fatal) to the patient! Despite earlier concerns about dental staining in children treated with tetracyclines, the American Academy of Pediatrics and other expert advisory groups now recommend doxycycline as the drug of choice in both adults and children.[3]

Prevention of RMsf involves avoidance, insofar as possible, of tick exposure. Because unengourged ticks must be attached for several hours before they can transmit the agent of RMsf (*Rickettsia rickettsii*), the public should be made aware of the importance of early removal of any attached or crawling ticks when they have been in an area of possible exposure. Also, just as physicians should not delay appropriate treatment, the public needs to know the importance of seeking medical attention quickly should signs and symptoms of RMsf develop after a tick exposure.

1. DE Sonenshine, AH Peters, and GF Levy, "Rocky Mountain Spotted Fever in Relation to Vegetation in the Eastern United States, 1951-1971," *Am J Epidemiol* 96 (1972): 59-69.
2. WD Tigertt, "A 1759 Spotted Fever Epidemic in North Carolina," *J Hist Med* 42 (1987): 296-304.
3. Centers for Disease Control and Prevention. [Diagnosis and Management of TickBorne Rickettsial Diseases: Rocky Mountain Spotted Fever, Ehrlichiosis, and Anaplasmosis—United States: A Practical Guide for Physicians and Other Health-Care and Public Health Professionals]. *MMWR* 2006;55 (No. RR-4), www.cdc.gov/mmwr/PDF/rr/rr5504.pdf.