Scrub typhus with epilepsia partialis continua - A case report

THOMAS XAVIER PAULSINGH

Department of General Medicine,
MADRAS MEDICAL COLLEGE AND GOVERNMENT GENERAL HOSPITAL

Abstract: Scrub typhus which is endemic in India, is a mite-borne infectious disease caused by Orientia tsutsugamushi. Scrub typhus is manifested clinically by high fever, intense generalized headache, diffuse myalgia and in many patients rash and an eschar at the site of the chigger bite. Here we report a case of scrub typhus presenting with epilepsia partialis continua.

Keyword: Scrub typhus, epilepsia partialis continua

A 57 years old female residing in Kanchipuram was referred from a private hospital with the history of fever for 20 days. She had hematuria 2 episodes 10 days back. She developed bloody diarrhea and headache for the past 3 days. There was no history of jaundice, cough, joint pain and oliguria. She was not a known case of diabetes mellitus, systemic hypertension or epilepsy. She developed focal seizures involving right upper limb and right side of face. She was started on T. Carbamapine 200mg bd. Since seizures did not subside she was referred to our hospital for further management. On examination patient was conscious, oriented and febrile. An eschar was noted over left breast and there was no regional lymphadenopathy. She also had neck stiffness. Fine crepitations were present over both inter and infrascapular region. Liver was palpable 4 cm below the right costal margin along the mid clavicular line and it was tender. Patient developed focal seizures during examination.

Eschar over left breast

Complete blood count, renal function and liver function tests were normal. CT brain and CSF analysis showed normal study. IgM scrub typhus was positive. Chest x-ray showed heterogenous opacities in bilateral lower zones. Patient was treated with C. Doxycycline 100mg bd for 7 days. Patient was fully recovered and repeat chest x ray was normal.

Discussion: Scrub typhus is a mite-borne infectious disease caused by Orientia tsutsugamushi. It is a gram-negative coccobacillus that is antigenically distinct from the typhus group rickettsiae. There are three variants or strains of O. tsutsugamushi (Karp, Gilliam, and Kato). Infection with one strain does not preclude reinfection with a different strain. The reservoir and vector of scrub typhus are larval trombiculid mites of the genus Leptotrombidium. Scrub typhus is characteristically a geographically focal disease. Transmission of O. tsutsugamushi may occur in sharply delineated “mite islands” that consist of focal locations of scrub vegetation as small as a few square meters. Mites live on the vegetation, and moisture and temperature conditions are ideal for propagation of chiggers and their small rodent hosts. The disease typically occurs 7 to 10 days after the bite of an infected chigger. O. tsutsugamushi is distributed throughout the Asia Pacific rim. Scrub typhus is endemic in Korea, China, Taiwan, Japan, Pakistan, India, Thailand, Malaysia, and in the tropical (northern) regions of Australia. Scrub typhus may begin insidiously with headache, anorexia and malaise, or start abruptly with chills and fever. As the illness evolves, most patients develop high fever, intense generalized headache diffuse myalgia. Relative bradycardia, rash, eschar, nausea, vomiting, diarrhea, generalized lymphadenopathy and splenomegaly occur in majority of patients. The usual gastrointestinal manifestations are superficial ulcers, erosions, or actively bleeding ulcers. Respiratory complaints are often present. Rarely, acute respiratory distress syndrome may occur. The most common abnormalities in chest x ray are bilateral reticular opacities, cardiomegaly and congestive heart failure. Pericardial effusion has been reported in autopsy series. Involvement of blood vessels in the central nervous system may produce meningitis and encephalitis. Death may occur as a result of these complications, usually in second week. As with all rickettsial diseases, no laboratory test is diagnostically reliable in the early phases of scrub typhus. The disease is usually recognised when clinicians correlate the presence of compatible clinical signs, symptoms, and laboratory features, with epidemiologic clues. The nonspecific laboratory abnormalities are thrombocytopenia, leucocytosis, leucopenia,
elevated liver enzymes, bilirubin, and serum creatinine. Diagnostic methods for confirmation of O. tsutsugamushi infection include serology, biopsy, culture, and polymerase chain reaction. The indirect fluorescent antibody test remains the mainstay of serologic diagnosis; a four-fold rise in titres over a 14-day period is conclusive. A single measurement may be informative when there are locally validated criteria for a positive test. When a single measurement is performed, the most common cut-off titre is 1:50 (range 1:10 to 1:400). A single measurement may also be used to make a preliminary diagnosis in travellers who live in areas in which scrub typhus is not endemic and who have recently returned from an endemic area. However, only paired titres can make a definitive diagnosis. Culture and PCR testing are only available in specialised research facilities. The pathological hallmark of scrub typhus on skin biopsy is a lymphohistiocytic vasculitis. Patients treated with appropriate antibiotics typically become afebrile within 48 hours of starting therapy. Delayed defervescence was associated with jaundice and relative bradycardia. In the past Chloramphenicol 250 to 500 mg oral or iv qid was used. Now doxycycline 100 mg oral or iv is drug of choice for this illness The optimal duration of therapy is uncertain. Short course therapy with doxycycline 200 mg bd for one day is associated with an increased risk of relapse. Tetracycline 500 mg qid for 7 days or doxycycline 100 mg bd for 3 days are effective without increasing the risk of relapse. Some strains of O. tsutsugamushi are resistant or unresponsive to therapy with tetracyclines (including doxycycline). Azithromycin or combination therapy including rifampicin is used in this situation. No vaccine is available because of antigenic heterogeneity of O. tsutsugamushi. Thus, current attempts at prevention consist of chemoprophylaxis and mite control. Chemoprophylaxis with weekly 200mg of doxycycline is highly effective when used by non-immune individuals. The use of insect repellents and miticides are highly effective when applied to both clothing and skin. Permethrin and benzyl benzoate are also useful agents when applied to clothing and bedding.

Conclusion:
Scrub typhus is increasingly being recognized in certain parts of Tamil Nadu. Hence, in any patient presenting with fever, a thorough whole body examination should be performed to look for the presence of eschar, especially in hidden areas like axilla, groin and under surface of breast in females. Considering scrub typhus in the differential diagnosis of fever of unknown origin seems reasonable.

References:

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