

Brachial Neuritis in Association with Scrub Typhus: A Rare Presentation

Sanjay Kumar Singh¹, Sudha Vidyasagar²

¹Assistant Professor, Department of Medicine, Kasturba Medical College, Manipal, Karnataka, India

²Professor & Head of Department, Department of Medicine, Kasturba Medical College, Manipal, Karnataka, India

Abstract: *Scrub typhus can be associated with number of neurological conditions like, meningoencephalitis, Guillain barre syndrome etc. In literature, very few cases have been found to be associated with brachial plexopathy. Herein, we present a case report of 60 year old man who had scrub typhus with the unusual neurologic complication of brachial neuritis. The initial manifestations were fever, myalgia, flank pain and eschar. Laboratory reports showed high leukocyte count, low platelets and deranged liver and renal function tests. During stay in hospital, patient developed left shoulder pain, which was diagnosed to be brachial neuritis on electrophysiologic examination. He had a nearly complete recovery after adequate medical treatment.*

Keywords: Scrub typhus, brachial neuritis, chigger, eschar, EMG

1. Introduction

Scrub typhus is rampant in northern, eastern and southern India. Apart from these regions, recently it has also been reported from central India. It is imperative to differentiate scrub typhus from other febrile illnesses and to start specific treatment at the earliest to decrease morbidity and mortality. This disease can develop neurological complication like meningoencephalitis, brachial plexopathy, etc. Herein, we report a rare case of scrub typhus with brachial neuritis.

2. Case Report

A 60 yr old male patient, from Davangere district, Karnataka (India) was admitted with complaint of fever for 10 days which was high grade and not associated with chills or rigor. He also complained of myalgia, dyspnea and left sided chest pain for 2 days. The patient developed left shoulder pain after 1 day of stay in hospital.

On General Examination

The patient was febrile and Heart rate was irregularly irregular, with rest of the vital parameters being within normal limit.

An eschar was present over right scapular region (Fig1).

Decreased breath sound was present in left middle and lower lung fields, with dull note on percussion over left middle and lower zone of lung,
Mild splenomegaly (+)
Examination for shoulder pain was suggestive of decreased shoulder movement on left side.

Biochemical Investigations

Complete blood count – Hb- 13g/dl, platelet count – 45000/cmm, smear showed increase number of neutrophils, with left shift and cytoplasmic vacuoles.

Malarial parasite QBC test- negative. The patient had deranged liver function tests with LFT (Total Bilirubin = 3.2 mg/dl, AST= 226 IU/L, ALT= 95 IU/L, ALP=721 U/L), Creatinine phosphokinase =499U/L, serum creatinine=1.6 mg/dl. Serology for typhoid was negative. Routine examination of urine was normal.

PCR for scrub typhus was positive.



Fig 1: Eschar noted below the right shoulder

Radiological Investigations

USG abdomen was suggestive of mild splenomegaly, Xray chest PA view was suggestive of opacity present over left middle and lower lung fields. Xray left shoulder (done for shoulder pain and decreased range of motion) was normal, Pleural fluid aspiration was suggestive of exudative pleural effusion. **Electromyogram (EMG) was done for the shoulder pain, which showed evidence of brachial neuritis.**

The patient showed good response and improved symptomatically after being treated with antibiotic for scrub typhus (Doxycycline 100 mg twice a day).

3. Discussion

Scrub Typhus is a rickettsial illness caused by *Orientia tsutsugamushi* which is maintained by transovarian transmission in trombiculid mites. The disease is so called because of the type of vegetation where the mite is present. The infected larval mites (chiggers, the only stage that feeds on a host) enter the human body through skin. These infections are found particularly in areas of heavy scrub vegetation during wet season.

As far as geographical location is concerned, scrub typhus is endemic and reemerging in eastern and southern Asia, northern Australia and islands of western Pacific and Indian oceans. These infections have tendency to recur. The patient can present with varied clinical symptoms. The spectrum of manifestation can be mild and self-limiting to fatal. The incubation period of the disease ranges from 6-21 days. Initially, the patient can present with fever, headache, cough, myalgia, gastrointestinal symptoms. Sometimes, patients can recover spontaneously after few days.

The classic case shows an "eschar" where the chigger has fed. The eschar at the bite site is the single most useful diagnostic clue and thus febrile patients without any localizing signs should be thoroughly examined for its presence. Scrub typhus may be associated with regional lymphadenopathy, and a maculopapular rash. Either of these signs can be present. In severe cases, encephalitis can occur and there can be associated pneumonia due to vascular injury. Various other rare neurological conditions like Guillain barre, brachial plexopathy have been reported. The estimated case fatality rate for untreated cases is about 7%, but can be further decreased if mild cases are diagnosed at appropriate time.

Laboratory investigations which can aid in further definitive diagnosis are serologic assays (IFA, indirect immunoperoxidase, enzyme immunoassays). PCR amplification of *Orientia* genus from eschars and blood is also effective.

Antibiotic are the mainstay of treatment modalities, like doxycycline (100 mg bid orally for 7-15 days), azithromycin (500 mg orally for 3 days). Some resistant cases to doxycycline and chloramphenicol have also been identified but they respond to azithromycin and rifampin.

4. Conclusion

Scrub typhus can present with a wide range of neurological conditions. It should be kept as an important differential diagnosis whenever any patient presents with acute febrile illness along with associated neurological manifestations. The timely diagnosis along with appropriate therapy for scrub typhus can reduce the neurological complications to a great extent and thereby markedly reducing the chance of developing fatal consequences.

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Author Profile:

Dr. Sanjay Kumar Singh is presently working as Assistant Professor in the Department of Medicine, Kasturba Medical College, Manipal, Karnataka, India. He pursued his M.D. Medicine from Rajendra Institute of Medical Sciences, (RIMS) Ranchi, Jharkhand, India