Letter to the Editor

[The Editor is not responsible for the views expressed by the correspondents]

Chigger Fever or Cigarette Burn — Unraveling the Mystery of Skin Sore

Sir, — Scrub typhus, mite triggered zoonosis was described in association with red mites in China in 313 AD. Orientia tsutsugamushi was discovered in Japan by Nagayo and Ogata in the 1920s and early 1930s. This microorganism is maintained in nature via trans ovarial transmission by its vector, trombiculid mites. Eggs laid by infected mites hatch with the emergence of infected larvae (chiggers) that feed on the rat population. Both humans and rats are dead-end hosts. Human transmission occurs by the bite of the larva of trombiculid mites. Later disseminated vasculitis along with perivascular inflammation occur finally leading to significant vascular leakage leading to end - organ injury and death from multi organ failure. One of the leading cause of non - malarial febrile illness in asian subcontinent. The decision to initiate treatment should be on clinical suspicion and confirmed by serological tests at a later date. Here we describe a young male who presented with fever, typical constitutional symptoms with classical cutaneous eschar who responded well with doxycycline, a first line of treatment.

Case Report

A 30-year-old male soft ware professional presented to our skin OPD with painful sore in right thigh of 5 days duration. Gave H/O of mountain trekking 2 weeks ago. Associated with fever with chills, nausea, malaise, headache, myalgia and dry cough. General examination revealed fever, with bilateral conjunctival congestion. Systemic examination - No hepatosplenomegaly. Eyes - conjunctival hyperemia with normal retina. Skin examination - an reddish brown eschar of size 2 X 2 cm with surrounding erythema was seen in anterolateral aspect with linear tender band like erythema was seen in then anteromedial aspect of right thigh (Figs 1&2). Bilateral tender inguinal adenopathy was noted. There were no signs of meningeal irritation. No focal neurological deficits. Routine hematological investigations revealed leucocytosis with lymphopenia, high ESR. There was 2 fold rises in serum transaminases. CSF examination was normal. No alteration in renal function tests. Chest X-ray was WNL. He was treated Tab. Doxycycline 100 mgm BD orally after food for 2 weeks along with supportive measures. On 5th day, patient was symptomatically better with remission of symptoms and signs (Figs 3&4). Paired sera taken on the day of presentation and 3 weeks later showed rise in antibody titre which confirmed the diagnosis and clinical response to treatment.

Discussion

This chigger fever caused by rickettsial bacterium Orientia tsutsugamushi with high antigenic variation predominantly affect young adults[1]. One of the common cause of acute undifferentiated febrile illness (AUFI) in endemic areas, It may be fatal at times[2,3]. The vector is the larval stage (chigger) of the trombiculid mite. The mites and the rodents that carry this gram negative organism serve as the major reservoirs. Scrub typhus, named after the type of vegetation that harbors the mite vector, is endemic in India. Also seen as occupational disease in rural areas. Long incubation period also observed. Clinical features arise after an incubation period of 6-21 days and manifest as fever, headache, myalgia, and gastrointestinal symptoms[4]. The bite mark 'eschar' is a pathognomonic sign of scrub typhus that occurs at the site of the chigger feeding. It appears as an ulcer that enlarges and undergoes central necrosis to finally turn into a black crust. This skin lesion may appear similar to a skin burn from a cigarette[4]. Common sites of eschar are often in hidden areas like neck, axillary, and infra-axillary regions. In both sexes, it is usually seen below the umbilicus in the front of the body, while in women, the prominent sites were the mammary and inframammary regions[5]. Our patient had the lesion in front of thigh. The pathophysiology consists of vasculitis as a result of endothelial cell infection and subsequent infiltration of T cells and monocytes/macrophages around the blood vessels. If left unattended, complications like hepatitis, renal failure, meningoencephalitis, respiratory failure in the form of Acute Respiratory Distress Syndrome (ARDS), and sometimes myocarditis are reported. Rarely, CNS involvement such as acute diffuse encephalomyelitis, encephalopathy, meningitis, and sometimes deafness, cranial nerve palsies, and various eye manifestations are also seen especially in second week of the unattended infection. Usually responds to doxycycline but azithromycin, rifampicin and ciprofloxacin can be used as alternatives. DEET applied over the skin or impregnated into clothing is found to effective in preventing disease transmission. Chemoprophylaxis with weekly doxycycline especially when venturing in to endemic areas may be effective. Rodent control measures may paradoxically increase the risk of disease as chiggers lose their natural host and target humans. Rapid urbanization with change in land use is the major contributing factor towards increase in prevalence. Chigger thrives in hot and humid conditions and with the increase in global warming and high humidity especially during the monsoons, adding more to existing prevalence of infection. Trekking or camping also adds to the disease burden by increased exposure to mite bites. Despite being seen commonly, this disease is under reported and neglected in terms of research and formulation of systematic vector control policies. No vaccinations are available till recently.

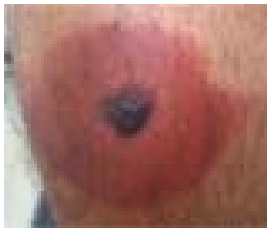

Fig 1 — Eschar on thigh

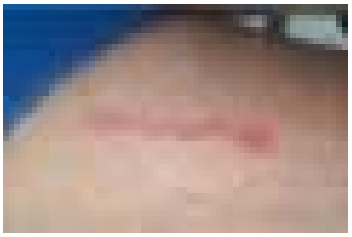

Fig 2 — Linear band like erythema on thigh

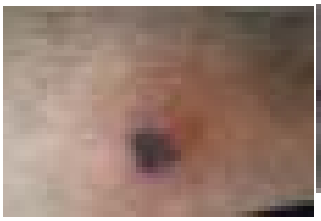

Fig 3 — Resolving eschar

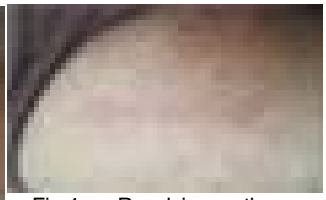

Fig 4 — Resolving erythema after doxycycline

Conclusion

This case report depicts that there should be high index of clinical suspicion when patients report from endemic areas. Prompt relevant investigations with early drug institution helps in clearance of the disease which may be fatal at times.

References

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