



### Case Report:

## Scrub Typhus Presenting as Acute Myocardial Infarction.

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**Abstract:** Scrub Typhus, or tsutsugamushi disease is a febrile illness caused by bacteria of the family Rickettsiaceae and named *Orientia tsutsugamushi*. Recently it has been found to endemic in Subhimalayan region of India. Scrub typhus affects skeletal muscles, skin, lungs, kidneys, brain and cardiac muscles. We report a rare case of scrub typhus presenting as acute myocardial infarction.

**Keywords:** Scrub typhus; Myocardial infarction

### Case Report

A 42 year old male presented with history of fever of 5 days duration, fever was high grade documented around 103<sup>o</sup>F, associated with severe bodyaches and chest pain, which was retrosternal, squeezing, associated with sweating, palpitations and radiating to left side of shoulder since 6 hours. There was no history of any yellowish discoloration of eyes, decreased urine output, headache & altered sensorium.

On examination patient was conscious, cooperative, tachypneic, tachycardia was there, perspiring and patient continued to have chest pain, blood pressure was 128/76mmHg, febrile, there was conjunctival suffusion and insignificant axillary lymphadenopathy. Eschar was present over the scrotum. Rest of the systemic examination was normal.

Electrocardiography was done in the casualty and it was showing ST elevation in V1-V6 region and Trop T was positive. Kidney & Liver function tests were within normal range, blood & urine cultures were sterile. No history and risk factors suggesting towards young CAD and work up for the same was within normal limit. Bedside Echocardiography was done to rule out myocarditis, but it was showing regional wall motion abnormality in LAD territory. In view of epidemicity of scrub typhus in sub-himalayan regions IgM

ELISA for scrub typhus was done & was showing positivity for scrub typhus.

Managed with streptokinase 1.5 million units after premedication, Aspirin 325mg stat, Clopidogrel 600mg stat, High dose of atorvastatin 80mg, Metoprolol 12.5mg 6<sup>th</sup> hourly, Low molecular weight heparin 0.6 ml 1BD & Injectable Azithromycin 500 mg IV once a day for 3 days & Doxycycline 100 mg twice a day for 14 days. At discharge patient was pain free, fully conscious, was able to communicate with his attendants & was able to walk individually and advised regarding the exercise, diet and anti-ischemic drugs and advised to come after 2 weeks

### Discussion

Increased prevalence of scrub typhus has been noted in the Asian subcontinents and tsutsugamushi triangle. Scrub typhus is a common infection in sub Himalayan region of India<sup>1</sup> and it is known to occur all over India, including Southern India.<sup>2</sup> Scrub typhus is a small obligate gram negative, intracellular bacteria, Family rickettsiae, genus *Orientia* & its Cell wall lacks peptidoglycans and lipopolysaccharides. Primary reservoir, is a chigger/mite, larval stage, trombiculid mite (*Leptotrombidium daliense* and others). Secondary reservoirs are mainly rodents & humans. Incubation period is 5-20 days, mean 10-12 days.

*Orientia tsutsugamushi* is the causative agent & transmitted to humans through the bite of trombiculid mites. The mites have a four-stage lifecycle: egg, larva, nymph and adult. It is the accidental disease in humans & chigger (larval) phase is the only stage that is parasitic on animals or humans.<sup>3</sup> It divides and breeds within the phagocytes and escape from the cell back into the circulation to continue to proliferate on the endothelium of small blood vessels releasing cytokines which damage endothelial integrity, causing fluid leakage, platelet

aggregation, polymorphs and monocyte proliferation, leading to focal occlusive end-angiitis causing microinfarcts.

It is now well established that a majority of sequelae associated with human rickettsioses are the outcome of Rickettsial vasculitis.<sup>4</sup> Especially affects skeletal muscles, skin, lungs, kidneys, brain and cardiac muscles. Cardiovascular system manifestations are mainly due to endothelial cell damage, vasculitis, inflammatory cell infiltration, typhus nodules, new endothelial cell proliferation, thrombosis, ischemia & infarction.<sup>4,5</sup> Till now only one case was reported in English literature "acute myocardial infarction following scrub typhus infection".<sup>6</sup>

Severe infections may be complicated by interstitial pneumonia, pulmonary edema, congestive heart failure, circulatory collapse, and a wide array of signs and symptoms of central nervous system dysfunction, including delirium, confusion, and seizures. Death may occur as a result of these complications, usually late in the second week of the illness.

#### **Learning Points**

The importance of this case report is to highlight that scrub typhus can cause vasculitis of organ system in the body especially lungs, kidney, brain & cardiac tissue.

#### **References**

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