

Scrub Typhus: A clinical case report

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ABSTRACT

Despite an ongoing revival as the clinical appearance is typically untypical, Scrub typhus is still under diagnosis and results in a low clinical suspicion index.

In this case study we describe about a 20-years-old young girl having 5-days history of fever (39°C-40°C) of unfamiliar source having headache and loss of appetitewith maculopapular rash.

She underwent inpatient management, which included 100 mg of tablet Minoz(doxycycline), Tablet Pantoprazole 40 mg od, Tablet ondansetron 4 mg tds, hydrocortisone 100 mg tds, and tablet. Paracetamol 500mgtds. Her symptoms cured after 2 weeks of treatment and the eruptions stopped. Uncomplicatedly, she was discharged and under nursing management her vital sign was monitored, maintain the O2 levels as well as the consumption and output and all basic nursing care has been provided. Her Fever was reduced and signs of improvement in eruptions were disappeared at the end of treatments.

Conclusion: Management was mainly aimed at protecting patient wellbeing, preventing complications and improving the quality of life. The patient received all medical therapy and the results show that the therapy and care was effective. The nurses who play an important role in the bedside and take care of patients suffering from Scrub typhus.

Key Words: Nursing management; Orientia tsutsugamushi; Pharmacology; Scrub typhus

Introduction:

Tsutsugamushi Scrub typhus is a Excruciating disease caused by Orientia tsutsugamushi, also called a tsutsugamushi disease. This 13,000,000 square kilometres endemic area encompasses

Afghanistan and China, Korea, the Southwest Pacific and Australia. (Kelly *et al.*, 2009) One billion people are at risk and nearly one million cases report annually. (Watt and Parola, 2003) Factories with thrombocytopenia and bleeding are diagnosed as a differential diagnosis. (Watt and Parola, 2003) Scrub typhus can manifest with either no positive or nonpollinated.

Scrub typhus can occur with non specific febrile disease or with constitutional symptoms (fever, rash, myalgia, and headache) or organ dysfunction like the kidney (acute kidney injury), the lung (pneumonia), the heart (myocarditis), the liver (hepatitis), and central nervous system (meningitis) (Devine and Physiotherapy, 2003) (Choi *et al.*, 2016) The disease can be diagnosed as a differential diagnosis for the fever with thrombocytopenia or hemorrhaging.

Despite growing recognition due to the diverse clinical conditions, scrub typhus is still under diagnosed. For the diagnosis, it is important to show the disease and a high degree of suspicion. We present a case of fever (39°C-40°C) of unknown origin, headache and loss of appetite and maculopapular rash.

CASE

A 20years-old girl was admitted with a history of fever (39°C-40°C) of unknown origin, headache and loss of appetite and maculopapular rash on the whole body for five days period.

Three weeks before admission, she had been to a farm. Thereafter, 4 days before coming to our hospital, she was admitted to a local hospital showing symptoms of fever and skin rash. Paracetamol was provided for fever control without much improvement.

She visited our emergency department as she manifested low blood pressure. She was alert on admission, but her physical examination indicated that her body rash with eschar at the right arm was rash. Her body temperature was 102°F and her blood pressure was 100/60mmHg. On examination, dehydrated and, Tachypnea (26 breaths/min), and had pulse rate of 98/min and blood pressure of 98/70 mmHg.

During initial study, pH, 7.44; PaCO₂, 34.2 mmHg; PaO₂, 46.1mmHg; HCO₃, 22.9 mmHg/L; and saturated oxygen, 84.8% were identified in the subsequent arterial blood gas analysis (ABGA). Her haemoglobin level was 11.6 g/dL, 35.3 percent, 10.160/μl of white blood cells, and 149.000/μL of platelets. Serum urea of the blood was 28.3 mg/dL and serum blood urea was 27.5

mg/dL. The total sum of bilirubin was 0.5 mg/dL: aminotransferase aspartate, 59 IU/L; aminotransferase alanine, 55 IU/L. Further laboratory testing showed 135 mg/dL of glucose; C-reactive protein, 16.39 mg/dL; partial activation time 41.2 seconds of thromboplastine; prothrombin time 13.7 seconds. Arterial blood gas analysis revealed respiratory alkalosis hypoxemia. Intensive care unit, she was admitted with a nasal oxygen inhaler of 5 L/minute. A fluorescent indirect O antibody test. A titer of 1:1,270 was revealed in tsutsugamushi. The patient underwent inpatient management, which included 100 mg of tablet Minoz (doxycycline) 100 mg bd, Tablet pan 40 (Pantoprazole) 40 mg od, Tablet ondansetron 4 mg tds, hydrocortisone 100 mg tds, and Tablet Paracetamol 500 mg tds. Oxygen therapy 4 lit/min has been started. Her symptoms healed and the rashes vanished after 2 weeks of treatment.

Nursing Management:

Hospital care:

The nurse is in charge of administering the medications and determining their positive and adverse effects on the patient. The patient with scrub typhus needs well structured treatment. Tab. Doxycycline (a antibiotic tetracycline group) recommended for a patient should be given during or after meals with plenty of water. Track the patient for side-effect as Tetracycline drugs can cause dentures, enamel hypoplasia and skeletal growth delays in children.

Check for patient side-effects. In cases of fever, administer the anti-pyretic medicinal product as recommended, therefore, Kids under the age of eight and during pregnancy. Subtle sponging may be carried out to reduce the temperature to an appropriate amount, in a well ventilated room, the patient should be nourished. Rest and sleep can be assured by a peaceful and relaxed environment. Keep personal hygiene with soap and water every day by the wash.

Furnish cotton clean dresses. Pressure sores should be avoided with care. The clean, wrinkleless and dry linens are to be kept.

To treat serious headache and lymphadenopathy, administer medicines as prescribed. The lotion of calamine should be added to the skin softening for rashes. There is no dressing appropriate on the eschar because it heals by itself. Use honey to soothe the throat of the coughs. Increase the intake of fluid in fruit juices, milk, soups, etc. Athletes should be given orally about 2-3 liters of fluid every day. It is essential to preserve oral hygiene by lubricating with an ointment, lips should be kept moist. An individual should be provided with an easily digestible, palatable, high-calorie liquid or soft diet. Check the complication of the patient (pneumonia, myocarditis and

meningoencephalitis). Oxygen is administered in serious cases of dyspnea and cyanosis. Administer antibiotics as necessary if the patient develops pneumonia. Move the patient side by side to stop consolidation.

Administer plasma or whole blood or intravenous fluids on request. If necessary keep the map output and input. I.V. The risk of liquid overload which could lead to pulmonary Edema should cause caution in the administration of fluids. To search for hemorrhage, apply vitamin K as prescribed. Avoid rare venous punching because of a thrombosis risk. Check the vital signs properly. The heart or lungs are demonstrated by tachycardia and quick breathing.

Community set up:

There is ample scope to avoid and treat the patients with scrub typhus by healthcare professionals who work in the community and hospital.

In the community the nurses can look for an eschar among suspicious patients in secret areas of the body, but scars cannot be found in all patients.

Nurses should take all suspected patients with scrub typhus to the health centre and start Doxycycline according to their doctor's order. The blood sample can be obtained and submitted for suitable testing for Scrub typhoid in the laboratory. They observe the patient closely for symptoms of multi-organ failure and complications, and may refer to a secondary or tertiary centre.

The stock of doxycycline in peripheral health centers should be tracked regularly. In general, health-education drives, role-playing and distribution of pamphlets, flyers and so on in endemic areas can be made public by nurses every year during pre-monsoon (June-July). (Rahi *et al.*, 2015)

Prevention

Endemic mitigation strategies include the use of protective wear and insect repellents (including potentially essential vegetable oils). A short-term reduction of the vectors may be introduced using environmental insecticides and plant management.

The eradication of Orientals tsutsugamushi infection includes antibiotics. The efficacy of doxycycline has been demonstrated, although in northern Thailand resistance has been reported. Equally successful are macrolides. For pregnant women and infants, azithromycin is beneficial.

In most cases, rifampin is used to resist doxycycline. For patients with scrub typhus, Telithromycin has been promised a new antibacterial agent.

Discussion:

In 50-80 percent cases of scrub typhus, few studies have reported eschar.

Conversely, some authors even without the presence of eschar reported scrub typhus cases. Thrombocytopenia and eschar renal disease in a child with fever

Impairment can be a beneficial recovery method in scrubbing children to prevent dengue infection. (Sirisanthana, Puthanakit and Sirisanthana, 2003)(Phuong *et al.*, 2006)

YanningLyu *et al.* conducted A risk factor case-control analysis associated with the infection of Scrub Typhus in Beijing, China (n=56). By matching age and profession, three subjects of neighbourhood control were chosen. All these were risk factors for the infections of scrub typhus living on the edge of the village, living in houses near the grass, the vegetable or dike, the cement floorless houseyard, piling weeds in the house or yard. Working in vegetable fields and hilly areas, and harvesting in autumn posed the highest risks, with odds ratio(Lyu *et al.*, 2013)

A recent Cochrane review (2018) found that azithromycin, tetracycline, doxycycline, Rifampicin are available and suggested as useful medicines for the treatment of scrub typhus the tetracycline, doxycycline and azithromycin may have little to no variations as Options for treatment. The study also found that few treatment failures have occurred. (El Sayed *et al.*, 2018)

Scrub typhus was initiated in 56 patients with doxycycline and in 2 patients with ARDS and multi-organ dysfunction, the combination doxycycline and azithromycin was employed (MODS). Both 58 patients had 10 days of treatment. Most patients responded in 2-3 days to doxycycline therapy except 2 patients who died from serious MODS (four organs) and have been referred to our hospital very late. Compared to a small study with doxycycline Azithromycin has shown similar efficacy (Phimdaet *et al.*, 2007)

In our case a patient is responded to the care given and was discharge from the hospital after 2 weeks without any complications.

The risk factors for scrub typhus in Darjeeling, India are reported in a puran k Sharma *et al.* report.

Comparing 62 cases of scrub typhus with 62 neighborhood controls (acute eschar fever and specific IgM). Increased likelihood of living near the cob (MOR) 10; 95% CI 2.3–63) and wood piling systems (MOR 3.5; 95% CI 1.5–9.5; farming (MOR 10; 95% CI 2.7–63), home watching rodents (MOR 3.6; 95% CI 1.4–11) and working (MOR 9; 95% CI 2.4–57), and rearing domestic animals (MOR 2.4; 95% CI 1.1–5.7). Cases of this type were more common for cobblestone (MOR 95% CI 1.4–5.7). After work washing (MOR 0.4; 95% of CI 0.1 to 0.9) and sleeping shifts (MOR 0.2; 95% of CI 0.1 to 0.5). Cases were less frequent after work. An exp-prevention safer, rodent-controlled area('typhus.pdf', no date)

By offering client and family health education, Scrub typhus can be prevented.

Conclusion:

In any population that has acquired acute undifferentiated febrile disease Scrub typhus should be regarded as a distinctly unreliable febrile condition irrespective of the presence of an eschar. Eschar should be carefully investigated in endemic regions on physical inspection as the clinical sign of scrub typhus is highly precise that can direct. These serological research should be conducted in atypical clinical scenarios as required in its absence multitude of clinical manifestations can occur in scrub typhus. It is extremely necessary for people to become aware of scrub typhus disease and prevention strategies by educating them.

Patient consent declaration: The writer certifies that all applicable patient consent forms have been received. In the format in which the patient(s) has consented to record his/her pictures in the journal as well as other clinical detail. The patients understand that they will not publish their names and initials and do their utmost not to reveal their identity.

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