CONDITION

Rickettsialpox

Rickettsialpox is a mite-borne bacterial infection that causes fever, a dark bite-site sore, and a blister-like rash.

WHAT IT IS
Mite-borne bacterial infection causing fever, an eschar, and rash

BODY SYSTEM
Skin and whole body

MAIN SYMPTOMS
Fever, headache, bite-site eschar, blister-like rash

WHAT CAUSES IT
Infection with Rickettsia akari bacteria

HOW IT IS DIAGNOSED
PCR or skin testing; paired blood antibody tests

MAIN TREATMENT
Antibiotics, usually doxycycline

CAN IT BE CURED?
Yes - antibiotics clear the bacterial infection

IS IT AN EMERGENCY?
Sometimes - confusion, breathing trouble, or severe dehydration

LONG-TERM OUTLOOK
Full recovery usual; lasting effects uncommon

Overview

Rickettsialpox is an infection caused by the bacterium Rickettsia akari . It spreads to people through the bite of an infected mouse mite. These tiny mites usually live on house mice, especially in buildings where rodents are present.

The condition often begins with a small sore where the mite bit the skin. Fever, headache, and a widespread rash usually follow. The rash may contain small fluid-filled spots, so rickettsialpox can be mistaken for chickenpox or another blistering illness.

Rickettsialpox is usually mild and treatable. Antibiotics like amoxicillin or doxycycline can shorten the illness, and most people recover fully. However, testing may be needed to separate it from other infections that cause fever and rash.

Rickettsialpox does not normally spread from one person to another. Having close contact with someone who has it does not mean you will catch it.

Symptoms

Symptoms usually begin several days to about two weeks after an infected mite bite. You may not notice the bite when it happens because mouse mites are very small.

The first visible sign is often a firm, red bump at the bite site. It may develop into a small blister and then form a dark crust. This crusted sore is called an eschar . It is often painless and may be hidden under hair or clothing.

Fever and other general symptoms usually appear around the same time as the eschar or soon afterward. They can include:

A widespread rash often appears a few days after the fever begins. It usually starts on the body and spreads to the arms and legs. The spots may become small, fluid-filled blisters before crusting over. The number of spots differs from person to person.

The rash may affect the face, palms, or soles, but this is not always the case. It is generally less itchy than chickenpox, although some people do have itching.

Symptoms can resemble chickenpox, other spotted fever infections, mpox, reactions to insect bites, or some medicine-related rashes. Appearance alone cannot always identify the cause.

- Sudden fever and chills
- Headache
- Muscle or joint aches
- Tiredness
- Swollen lymph nodes near the bite
- Sensitivity to light

Causes and risk factors

Rickettsialpox is caused by Rickettsia akari , which belongs to the spotted fever group of bacteria.

The usual animal host is the house mouse. A mite called Liponyssoides sanguineus can become infected while feeding on a mouse. The mite may then bite a person, particularly if mice leave a nest, are removed, or die and the mites look for another host.

Risk is higher in buildings with both mice and mouse mites. Cases have been linked to homes and other urban buildings with rodent infestations. A building can appear clean and still have mice inside walls, ceilings, storage spaces, or basements.

Rickettsialpox has been reported in several parts of the world. In the United States, it has been most closely associated with urban areas, including New York City. It is uncommon enough that it may not be recognised immediately.

The infection is not known to spread through coughing, touching the rash, sharing household items, or ordinary contact with another person.

Diagnosis

A clinician will consider your symptoms, the appearance of the eschar and rash, and any possible exposure to mice or mites. You may be asked about rodent activity in your home, workplace, or building.

Because several conditions can look similar, laboratory testing may be used. A sample from an eschar, blister, or small skin biopsy can be tested for bacterial genetic material using polymerase chain reaction , usually called PCR. PCR can provide more specific evidence of infection when an appropriate skin sample is available.

Blood tests look for antibodies, which are proteins your immune system makes in response to infection. Antibodies may not be detectable during the first week of illness. For that reason, one sample may be taken early and another several weeks later. A clear rise in antibody levels helps confirm a recent spotted fever group infection.

Antibody tests can react to more than one related Rickettsia species. They may confirm a spotted fever group infection without always proving that Rickettsia akari was the exact cause.

Treatment may begin before results return when the symptoms and exposure history strongly suggest a rickettsial infection. Waiting for antibodies to develop can delay useful treatment.

Treatment and management

Rickettsialpox is treated with antibiotics. Doxycycline is generally the preferred antibiotic for spotted fever group infections, including rickettsialpox. Public-health guidance supports its use for suspected rickettsial infections in adults and children.

The specific antibiotic and length of treatment are chosen by a clinician. Pregnancy, medicine

allergies, other health conditions, and the possibility of a different diagnosis may affect that choice. Do not use leftover antibiotics or someone else's prescription.

Fever and general symptoms often begin improving soon after effective treatment starts. The rash and eschar can take longer to heal. The dark crust usually loosens and falls away as new skin forms underneath.

Supportive care may include rest, fluids, and suitable non-prescription medicine for fever or discomfort. A pharmacist or clinician can help check whether a pain or fever medicine is appropriate for you, particularly if you are pregnant, take other medicines, or have kidney, liver, stomach, or bleeding problems.

Avoid scratching or picking at the eschar and rash. Keeping affected skin clean can reduce irritation and lower the chance of a secondary skin infection.

Complications

Rickettsialpox is generally less severe than some other spotted fever infections. Serious complications are uncommon, and deaths have not been associated with the typical course described in public-health guidance.

Fever can contribute to dehydration, especially in young children, older adults, or anyone who is vomiting or unable to drink. Scratching open spots can allow ordinary skin bacteria to enter, leading to increasing redness, pain, warmth, swelling, or pus.

Another concern is an incorrect initial diagnosis. Rickettsialpox may resemble infections that require different treatment or infection-control measures. A new blistering rash with fever should therefore be medically assessed rather than assumed to be rickettsialpox.

Prevention

There is no vaccine for rickettsialpox. Prevention focuses on controlling mice and the mites that live on them.

Seal holes and gaps that allow mice to enter. Store food, rubbish, and animal feed in closed containers. Remove clutter that provides nesting places. Traps and other rodent-control measures may also be needed.

Rodent and mite control should be planned together. Killing or removing mice without dealing with their mites may cause hungry mites to seek people instead. A licensed pest-control service can assess the building and choose suitable methods, especially when an infestation is

extensive or keeps returning.

If you rent your home, report signs of mice and biting mites to the landlord or building manager. Depending on local rules, a housing or public-health authority may also be able to help.

Do not handle dead rodents or nests with bare hands. Wear gloves, follow local public-health cleaning advice, and avoid sweeping or vacuuming dry rodent waste in ways that send contaminated dust into the air.

Living with it and what to expect

Rickettsialpox is usually a short-term infection rather than a condition that comes and goes for years. Fever and body aches often settle first. Skin spots then crust and heal over the following days or weeks.

The eschar may take time to disappear. It can leave temporary darker or lighter skin, especially if it was scratched or irritated. A permanent scar is possible but is not the usual outcome.

Tiredness may continue briefly after the fever and rash improve. Return to school, work, exercise, and other activities can be gradual, based on how you feel and whether another contagious illness has been ruled out.

Routine follow-up may be needed to review test results, confirm that symptoms are resolving, or collect a second blood sample. This is different from urgent care. A rash that is slowly fading and an eschar that is healing usually do not require emergency treatment.

Rickettsialpox does not normally become chronic. Once the infection has cleared, long-term health effects are uncommon. Recovery does not remove the mice or mites from a building, so pest control remains important to prevent another exposure.

When to get medical help

Arrange prompt medical assessment if you develop fever with a new blister-like rash, especially if you also have a dark crusted sore or have noticed mice or unexplained bites in your building. Early assessment helps distinguish rickettsialpox from other infections.

Contact a clinician again if symptoms are not improving after treatment begins, the fever returns, or skin lesions become increasingly painful, red, warm, swollen, or filled with pus.

Seek urgent medical care if you cannot keep fluids down, are passing very little urine, or have signs of significant dehydration such as marked dizziness or unusual sleepiness.

Call emergency services for:

These symptoms are not typical of uncomplicated rickettsialpox and need immediate assessment.

- Trouble breathing
- New confusion, collapse, or difficulty waking
- A seizure
- A severe headache with a stiff neck
- Blue, grey, or unusually pale lips or skin

Common questions

Is rickettsialpox the same as chickenpox?

No. Rickettsialpox is caused by Rickettsia akari bacteria and spreads through infected mouse mites. Chickenpox is caused by a virus and can spread directly between people. Their rashes can look similar, so testing and clinical assessment may be needed.

Can I catch rickettsialpox from another person?

Person-to-person spread is not expected. The usual route is the bite of an infected mouse mite. Household members may still share the same environmental exposure if mice and mites are present in the building.

Does the dark sore always appear?

An eschar is a typical feature, but it can be small, hidden, or overlooked. It may be under clothing, in the hair, or in another area that is difficult to see. Not finding one does not identify or exclude the condition by itself.

How long does rickettsialpox last?

The illness is usually limited to a few weeks, and antibiotics often bring earlier improvement in fever and general symptoms. The rash, eschar, and tiredness may take longer to disappear completely.

Is rickettsialpox dangerous?

It is usually mild and full recovery is expected. Serious illness is uncommon. Prompt assessment is still important because other infections can cause a similar fever and rash, and some of those conditions may need different treatment.

Can rickettsialpox come back?

Rickettsialpox does not usually relapse after the infection has cleared. However, another infected mite could bite you if the rodent and mite problem remains. Coordinated pest control

reduces that risk.

Sources

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