

Cat scratch disease

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Abstract

Cat scratch fever, also known as cat scratch disease (CSD), is a bacterial infection caused by *Bartonella henselae* commonly found in cats. It can be transmitted to humans through scratches, bites, or contact with cat saliva, leading to symptoms like fever, fatigue, and swollen lymph nodes. While most cases are mild and resolve on their own, severe complications can occur, especially in those with weakened immune systems. Understanding the disease's etiology, transmission, symptoms, diagnosis, and prevention is crucial for prompt recognition and management. Prevention strategies include vector control, maintaining personal hygiene, and avoiding contact with cats, while treatment typically involves antibiotics and supportive therapy.

Synonyms: Cat adenitis, Cat Scratch Fever, Cat- Claw Fever, Cat Scratch Syndrome.

Cat scratch fever, also referred to as cat scratch disease (CSD), is a bacterial infection caused by *Bartonella henselae* bacteria commonly found in cats. This zoonotic disease can be transmitted to humans through scratches, bites, or contact with cat saliva, leading to a range of symptoms, including fever, fatigue, and



swollen lymph nodes. While most cases of cat scratch fever are mild and resolve on their own, severe complications can occur, particularly in individuals with weakened immune systems. Understanding the causes, symptoms, diagnosis, and prevention of cat scratch fever is essential



for both cat owners and healthcare professionals to ensure timely recognition and appropriate management of this infectious condition.

Etiology

Cat scratch disease (CSD) is primarily caused by a bacterium known as *Bartonella henselae*. This bacterium is commonly found in cats, with approximately 40% of cats carrying *B. henselae* at some point in their lives. It's worth noting that most cats infected with this bacterium show no visible signs of illness, making it challenging to detect and prevent transmission. When humans come into contact with the bacterium, typically through scratches, bites, or exposure to cat saliva, they may develop symptoms of cat scratch fever.

Risk Factors

According to reports from the Centers for Disease Control and Prevention (CDC), cat scratch fever is more prevalent in certain regions of the United States, particularly in the southern part of the country. Additionally, certain demographic factors increase the risk of contracting CSD, with children between the ages of 5 and 9 years old being the most commonly affected group. Individuals with weakened immune systems, such as those living with HIV/AIDS, undergoing cancer treatment, or managing conditions like diabetes, are at higher risk of experiencing complications from a bacterial infection like CSD. These underlying health conditions can impair the body's ability to fight off infections, leading to more severe symptoms and potentially serious complications. Therefore, understanding these risk factors is crucial for both healthcare professionals and individuals, as it can inform preventive measures and prompt recognition and management of cat scratch fever infections.

Source and Transmission:

In Animals: Fleas serve as the primary vector for the spread of *Bartonella henselae* among cats, with transmission typically occurring through the cat flea *Ctenocephalides felis*. This bacterium can infect domestic and feral cats alike, with approximately 40% of cats carrying *B. henselae* at some point in their lives. It's important to note that while many infected cats show no outward signs of illness, in experimental conditions, some cats have exhibited neurological symptoms as a result of *Bartonella henselae* infection.

In Humans: Humans can become infected with *Bartonella henselae* through direct exposure to an infected cat that carries the bacteria. This transmission often occurs through scratches or bites from infected cats, as well as through flea bites. When an individual is scratched or bitten by an infected cat, the bacteria can enter the bloodstream, leading to the development of cat scratch fever. Flea bites can also serve as a mode of transmission, as fleas that have fed on infected cats can transfer the bacteria to humans during subsequent bites.

Disease in Animals: While many cats may carry *Bartonella henselae* without showing signs of illness, some may exhibit neurological symptoms under experimental conditions. These symptoms can vary and may include signs of neurological dysfunction due to the impact of the bacterium on the central nervous system.

Disease in Humans: Symptoms of cat scratch disease (CSD) typically manifest within 3 to 10 days after exposure to an infected cat or flea bite. Initial symptoms often include the formation of papules at the site of the scratch or bite, followed by the development of additional symptoms such as swollen lymph nodes, fatigue, headaches, loss of appetite, low fever, body aches, weight loss, sore throat, abdominal pain, chills, joint pain, and rash. In some cases, more severe complications may arise, including encephalitis and optic neuritis.

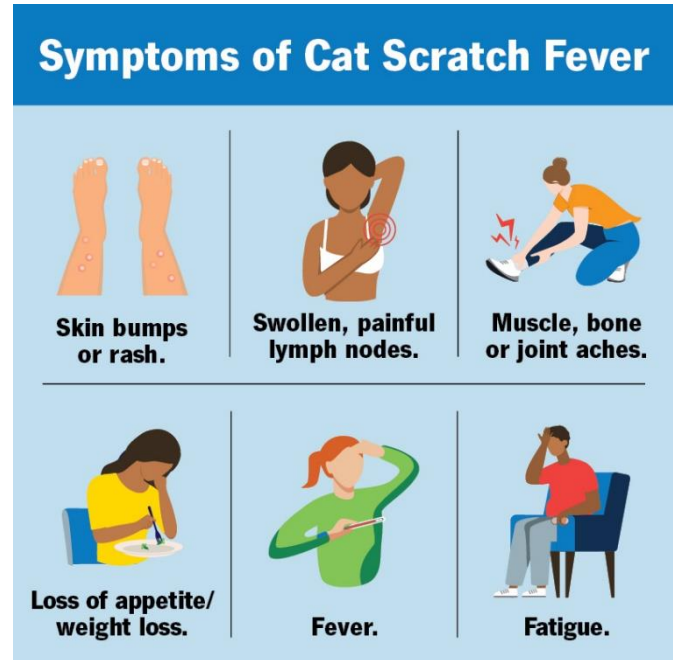
Additionally, approximately 2-18% of patients with CSD may experience Perinaud's oculoglandular syndrome, characterized by inflammation of the conjunctiva due to the pathogen's effect on the eye.

Diagnosis: Based on clinical sign and symptoms, history of contact with cat. The confirmative diagnosis of CSD by gram staining method, bacteriological isolation of organism, molecular diagnosis by PCR, serological diagnosis by ELISA, hanger-rose test which is delayed type hypersensitivity (DTH)

Treatment: We can use antibiotics like Enrofloxacin, amoxicillin, penicillin etc. along with NSAID. With supportive therapy.

Prevention and Control:

- Vector control by using insect repellent
- Maintenance of personal hygiene by hand wash after handling cat
- Avoid contact with cat
- Proper management and handling of cat
- Trimming of cat nails
- Do not allow cat to lick your eyes, mouth and wound.
- Keep your cat indoor and administer anti flea medication to reduce risk of *Bartonella*



henselae

- Control flea in your home by vacuuming and pest control agent
- Schedule routine health checkup of your cat by veterinary doctor
- Prevent cat from fighting with stray animal
- If you are wounded wash wound with soap and running tap water.

In conclusion, cat scratch fever presents a significant concern, particularly for cat owners and healthcare professionals, given its potential for transmission and associated complications. With *Bartonella henselae* prevalent in approximately 40% of cats and the risk of transmission through scratches, bites, or flea bites, understanding the disease's etiology and modes of transmission is paramount. Early recognition of symptoms such as fever, fatigue, and swollen lymph nodes is essential for timely diagnosis and appropriate management, especially in individuals with compromised immune systems. Implementing preventive measures, including vector control, personal hygiene practices, and proper cat management, can help mitigate the risk of infection. Continued research and public awareness efforts are necessary to further enhance our understanding and control of this zoonotic disease.

References:

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