CONDITION

Cellulitis

Learn about cellulitis, including common symptoms, causes, antibiotic treatment, recovery, complications, and when to seek urgent medical care.

WHAT IT IS
Bacterial infection of deeper skin layers

BODY SYSTEM
Skin

MAIN SYMPTOMS
Skin color change, warmth, swelling, pain or tenderness

WHAT CAUSES IT
Bacteria entering through broken skin

HOW IT IS DIAGNOSED
Skin examination and symptom history

MAIN TREATMENT
Antibiotics

CAN IT BE CURED?
Yes, most recover with antibiotics

IS IT AN EMERGENCY?
Sometimes, rapidly spreading swelling or discoloration

LONG-TERM OUTLOOK
Most recover without lasting problems, though recurrence is possible

Overview

Cellulitis is a bacterial infection of the deeper layers of the skin and the tissue just beneath it. It causes an area of skin to become inflamed, usually with redness or a change in color, warmth, swelling, and tenderness.

The infection can occur anywhere on the body. The lower legs are commonly affected in adults, while the face may be affected in children. Cellulitis usually affects one side of the body rather than matching areas on both sides.

Bacteria normally live on the skin without causing harm. Cellulitis develops when bacteria enter through a break in the skin. The opening may be obvious, such as a cut or wound, but it can also be a tiny crack that is difficult to see.

Cellulitis matters because the infection can spread if it is not treated. Most people recover with antibiotics like amoxicillin or doxycycline , especially when treatment begins promptly. Some people need hospital care because of severe symptoms, other health conditions, or an infection in a high-risk area such as around the eye.

Cellulitis is not the same as an abscess. An abscess is a pocket of pus that may need to be drained. Cellulitis can occur with or without an abscess. It can also resemble conditions that do not require antibiotics, including eczema, an allergic skin reaction, poor circulation, or inflammation caused by a blood clot. A clinical assessment is important.

Symptoms

Symptoms often develop over hours or a few days. The affected area may gradually become larger.

Common symptoms include:

Redness may be harder to recognize on brown or black skin. The affected skin may look darker, purple, gray, or different from the surrounding area. Warmth, swelling, tenderness, and changes in skin texture can help identify inflammation.

The edges of cellulitis are often not sharply defined. A closely related infection called erysipelas affects more superficial skin layers and may have a raised, clearer border.

Small blisters can sometimes develop. Red streaks extending from the area may suggest inflammation along lymph vessels, which are part of the body's immune and fluid-drainage system.

Arrange prompt medical assessment if you develop a painful, warm, swollen area of skin that is spreading, particularly if you also have fever or feel unwell. Cellulitis around an eye, on the face, over a joint, or near a surgical wound also needs prompt evaluation.

Seek emergency care for symptoms that may indicate a rapidly progressing infection or sepsis, the body's dangerous reaction to infection. These include:

- Redness or another noticeable change in skin color
- Warmth and swelling
- Pain or tenderness
- Skin that feels tight or looks shiny
- Fever, chills, tiredness, or a general feeling of being unwell
- Swollen lymph nodes near the infection

- Confusion, fainting, marked drowsiness, or difficulty staying awake
- Fast or difficult breathing
- Severe pain that seems out of proportion to the skin changes
- Rapidly spreading swelling or discoloration
- Purple or black areas, extensive blistering, or skin numbness
- Cold, clammy, or mottled skin
- Eye swelling with reduced vision, pain when moving the eye, or a bulging eye

Causes and risk factors

Cellulitis is most often caused by bacteria called streptococci or Staphylococcus aureus . Different bacteria may be involved after animal or human bites, water exposure, puncture wounds, or certain medical procedures.

The bacteria can enter through many types of skin damage, including:

Sometimes no entry point can be found. This does not rule out cellulitis.

Factors that can make cellulitis more likely include ongoing leg swelling, lymphedema, poor vein function, diabetes, obesity, reduced immune function, and a previous episode of cellulitis. Lymphedema means swelling caused by a buildup of lymph fluid, often after lymph-node surgery or radiation treatment.

Athlete's foot is an important risk factor for leg cellulitis because it can create small cracks between the toes. Nail problems and poorly healing wounds may also provide a route for bacteria.

Cellulitis itself is generally not spread from one person to another. However, bacteria associated with skin infections can sometimes spread through direct contact with draining wounds or contaminated personal items. Covering open wounds and practicing good hand hygiene can reduce this risk.

- Cuts, grazes, burns, or puncture wounds
- Insect bites or animal bites
- Cracked skin from athlete's foot, eczema, or very dry skin
- Leg ulcers or pressure injuries
- Surgical wounds or injection sites

- Swelling that stretches and weakens the skin

Diagnosis

There is no single test that confirms every case of cellulitis. A healthcare professional usually makes the diagnosis by examining the skin and asking how the symptoms developed.

The examination may assess the size, warmth, tenderness, and location of the affected area. The clinician may look for a wound, bite, ulcer, athlete's foot, abscess, or another possible source of infection. They may also check temperature, heart rate, blood pressure, and other signs of illness.

Blood tests are not always needed for mild cellulitis. They may be used when a person is very unwell, has significant health risks, or might need hospital treatment. Blood cultures, which check for bacteria in the bloodstream, are generally reserved for selected situations because they often do not identify the cause in uncomplicated cellulitis.

A sample of pus or wound drainage may be tested when it is available. Swabbing intact skin usually does not show which bacteria are causing an infection beneath the surface.

Imaging is not routine. An ultrasound may help detect a hidden abscess or assess for a blood clot when the diagnosis is uncertain. Other scans may be considered if there is concern about a deep infection, bone infection, foreign object, or infection around the eye.

Several conditions can resemble cellulitis. These include contact dermatitis, gout, an insect-bite reaction, inflammation from poor vein circulation, and deep vein thrombosis. Redness and swelling affecting both lower legs at the same time are less typical of cellulitis and may suggest another cause, although an examination is still needed.

Treatment and management

Antibiotics are the main treatment for cellulitis. The choice depends on the infection's location and severity, possible bacterial exposures, medication allergies, local resistance patterns, and the person's other health conditions.

Mild cellulitis is often treated with an antibiotic taken by mouth. More serious infection may require antibiotics through a vein in a hospital or outpatient treatment unit. Treatment may also begin in hospital if the infection is spreading quickly, oral medicine cannot be taken, or close monitoring is needed.

Take antibiotics exactly as directed and complete the prescribed course unless the treating

clinician tells you to stop or change it. Do not use leftover antibiotics or another person's medication. Contact the prescriber if you develop a possible medicine reaction or cannot keep the medicine down.

Symptoms do not always disappear immediately. The area can sometimes look slightly worse during the first day or two as inflammation continues. Pain and fever should then begin to improve, although skin discoloration and swelling may take longer to settle. Contact the treating service if symptoms are not beginning to improve within two to three days or are worsening at any point.

A clinician may mark the edge of the affected area to track whether it is spreading. If advised to monitor at home, note any change in size rather than repeatedly pressing or rubbing the skin.

Helpful supportive measures may include resting and elevating an affected arm or leg to reduce swelling. Keep moving nearby joints gently if this is comfortable, because prolonged immobility can lead to stiffness. Drink enough fluid unless a clinician has advised fluid restriction.

A nonprescription pain reliever may help, but it may not be safe for everyone. Ask a pharmacist or clinician if you have kidney disease, liver disease, stomach ulcers, take blood-thinning medicine, are pregnant, or are unsure which product is suitable.

Do not squeeze, puncture, or attempt to drain the area yourself. If an abscess is present, a clinician may need to open and drain it. Antibiotics alone may not adequately treat a substantial pocket of pus.

Skin conditions that allowed bacteria to enter also need attention. Treatment may include wound care, management of athlete's foot or eczema, moisturizing cracked skin, or support for chronic swelling. Compression garments may help some people with ongoing leg swelling, but their use during an acute infection should be discussed with the treating clinician.

People with repeated cellulitis may be referred for help managing lymphedema, vein disease, wounds, or other risk factors. Preventive antibiotics are considered only in selected cases after clinical review.

Complications

Most cellulitis improves without lasting problems. Possible complications include an abscess, spread of infection into the bloodstream, or infection of deeper tissues, a joint, or bone.

Sepsis can occur if the immune system has a severe response to the infection. Necrotizing soft-tissue infection, sometimes called "flesh-eating disease," is rare but requires emergency

treatment. Severe pain, rapid progression, numbness, blistering, or dark skin changes are warning signs.

Cellulitis can damage lymph vessels and contribute to long-term swelling. In turn, ongoing swelling makes another episode more likely. Repeated infections may lead to a cycle of inflammation, lymphatic damage, and recurrence.

Cellulitis near the eye can spread into the eye socket. This may threaten vision or spread to nearby structures, which is why eye pain, vision changes, or difficulty moving the eye require emergency assessment.

Follow up

Follow the review plan given by the treating clinician. Routine follow-up may not be necessary when a mild infection is clearly improving, but some people need reassessment because of the infection's location, severity, or underlying health conditions.

Contact the treating service promptly if the affected area continues to expand, pain is increasing, fever persists, new pus develops, or there is no improvement within two to three days of starting antibiotics. A clinician may need to reconsider the diagnosis, look for an abscess, or adjust treatment.

Seek urgent advice if vomiting prevents you from taking antibiotics or if you develop hives, facial swelling, or other symptoms of a medication reaction. Call emergency services for difficulty breathing, swelling of the tongue or throat, collapse, confusion, or other severe symptoms.

After recovery, skin discoloration or mild swelling may remain for a while. This does not always mean the infection is still active. Ask for review if the area starts becoming hotter, more painful, or larger again.

To reduce the chance of recurrence, care for cuts promptly, keep skin moisturized, treat athlete's foot, avoid walking barefoot where injuries are likely, and inspect the feet regularly if you have reduced sensation. Work with a healthcare professional to manage chronic swelling, ulcers, eczema, diabetes, or circulation problems.

Sources

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