DermNet NZ

Authoritative facts about the skin from the New Zealand Dermatological Society Incorporated.

Cellulitis

Cellulitis is a common bacterial infection of the skin, which can affect all ages. It usually affects a limb but can occur anywhere on the body. Symptoms and signs are usually localised to the affected area but patients can become generally unwell with fevers, chills and shakes (bacteraemia).

Severe or rapidly progressive cellulitis may lead to septicaemia (blood poisoning), necrotising fasciitis (a more serious soft tissue infection), or endocarditis (heart valve infection).

Predisposing factors

Cellulitis is more common in some situations.

- Previous episode(s) of cellulitis
- Venous disease (e.g. gravitational eczema, leg ulceration) and/or lymphoedema
- Current or prior injury (e.g. trauma, surgical wounds, radiotherapy)
- Diabetes
- Alcoholism
- Obesity
- Pregnancy
- Tinea pedis (or athlete's foot) in the toes of the affected limb

Clinical features

Some or all of the following features may be seen over the affected skin.

- Redness
- Swelling
- Increased warmth
- Tenderness
- Blistering
- Abscess
- Erosions and ulceration

If there is no increased warmth over the skin it is unlikely to be cellulitis.

Lymphangitis is a red line originating from the cellulitis and leading to tender swollen lymph glands draining the affected area (e.g. in the groin with a leg cellulitis). It is caused by infection within the lymph vessels.

After successful treatment, the skin may flake or peel off as it heals.

Cellulitis

Abscess

What may cause cellulitis?

Cellulitis is caused by bacterial infection. It can occur by itself, or complicate an underlying skin condition or wound. The most common infecting organisms are *Streptococcus pyogenes* (two thirds of cases) and *Staphylococcus aureus* (one third). Rare causes of cellulitis include:

- *Pseudomonas aeruginosa*, particularly following a puncture wound involving the foot or hand
- *Haemophilus influenzae* in children with facial cellulitis
- Anaerobes, *Eikenella*, *Streptococcus viridans* from human bites
- *Pasteurella multocida* from cat or dog bites
- *Vibrio vulnificus* from salt water exposure e.g. following coral injury
- *Aeromonas* from fresh water exposure e.g. following leech bites
- *Erysipelothrix* (erysipeloid) affecting a butcher

How is the diagnosis made?

The diagnosis of cellulitis is based on the clinical features. If any pustules, crusts or erosions are present, a swab should be taken for culture. A complete blood count is likely to show leukocytosis (raised white cell count). Blood cultures may be of use if a patient has a high fever or is otherwise very unwell.

Occasionally further investigations are required to rule out other possible diagnoses such as deep vein thrombosis of the leg, radiation damage following radiotherapy, or inflammatory breast cancer.

Treatment

Cellulitis is potentially serious and should be assessed by a medical practitioner promptly.

Most patients can be treated with oral antibiotics at home, usually for 5 to 10 days. However if there are signs of systemic illness or extensive cellulitis, treatment may require intravenous antibiotics either as an outpatient or in hospital. Treatment for uncomplicated cellulitis is usually for 10 to 14 days but antibiotics should be

continued until all signs of infection have cleared (redness, pain and swelling) - sometimes for several months.

Oral antibiotics used commonly are penicillin, flucloxacillin, dicloxacillin, cefuroxime or erythromycin. The usual intravenous antibiotics used are penicillin-based antibiotics (e.g. penicillin G or flucloxacillin) or cephalosporins (e.g. cefotaxime, ceftriazone or cefazolin) for a few days. Sometimes oral probenecid is added to maintain antibiotic levels in the blood.

In situations where a broader antibiotic cover is required, for example a diabetic patient with a foot ulcer complicated by cellulitis, amoxicillin and clavulanic acid may be used. Clindamycin, sulfamethoxazole/trimethoprim, doxycycline and vancomycin are alternative antibiotics in patients with serious penicillin or cephalosporin allergy, or where infection with methicillin-resistant *Staphylococcus aureus* is suspected.

Recurrent cellulitis

Patients with recurrent cellulitis should

- Avoid trauma, wear long sleeves and pants in high risk activities e.g. gardening
- Keep skin clean and well moisturised, with nails well tended
- Avoid having blood tests taken from the affected limb
- Treat fungal infections of hands and feet early
- Keep swollen limbs elevated during rest periods to aid lymphatic circulation. Those with chronic lymphoedema may benefit from compression garments.

Some patients with very frequent cellulitis may benefit from chronic suppressive antibiotic treatment with penicillin or erythromycin.

Related topics

On DermNet NZ:

- Streptococcal skin infections
- Impetigo
- Erysipelas
- Wound infection

Other websites:

- Cellulitis - Medline Plus
- Cellulitis - emedicine dermatology

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DermNet does not provide an on-line consultation service.
If you have any concerns with your skin or its treatment, see a dermatologist for advice.