CONDITION

Periorbital cellulitis

Periorbital cellulitis is a bacterial infection of the eyelid and skin around the eye.

WHAT IT IS
Bacterial infection of eyelid tissue outside the eye socket

BODY SYSTEM
Eyes and surrounding tissues

MAIN SYMPTOMS
Swollen eyelid, redness, warmth, tenderness

WHAT CAUSES IT
Bacterial infection

HOW IT IS DIAGNOSED
Eye examination; CT if deeper infection suspected

MAIN TREATMENT
Antibiotics and close monitoring

CAN IT BE CURED?
Yes, antibiotics usually clear the infection

IS IT AN EMERGENCY?
Sometimes, with vision change or painful eye movement

LONG-TERM OUTLOOK
Usually excellent with prompt treatment

Overview

Periorbital cellulitis is an infection of the eyelid and nearby skin. It is also called preseptal cellulitis. It most often affects one eye and is particularly common in children, although adults can develop it too.

The infection is limited to tissue in front of the orbital septum. This is a thin layer that helps separate the eyelid from the deeper eye socket.

Periorbital cellulitis matters because it can look similar to orbital cellulitis, a deeper infection behind the orbital septum. Orbital cellulitis can affect eye movement, vision, and nearby structures. A medical examination is needed to tell these conditions apart.

Most people with periorbital cellulitis recover fully with antibiotics like amoxicillin or doxycycline . Prompt assessment and follow-up help confirm that the infection is responding

and has not spread deeper.

Symptoms

Symptoms usually affect one side of the face. They may develop over several hours or a few days.

Common symptoms include:

The white part of the eye may look normal, although some surface irritation can occur. In uncomplicated periorbital cellulitis, vision should remain normal. The eye itself should move normally without pain, and it should not bulge forward.

Symptoms such as reduced vision, double vision, pain when moving the eye, restricted eye movement, or a bulging eye suggest that the infection may be deeper. These require emergency assessment.

Allergies can also cause swollen eyelids, but allergic swelling is often itchy, affects both eyes, and is less likely to be hot or tender. Other possible causes include an insect bite, injury, stye, blocked eyelid gland, or inflammation of the eye surface. Appearance alone may not reliably identify the cause.

- Swelling and redness around the eye
- A warm or tender eyelid
- Difficulty opening the eye because of swelling
- Fever or feeling unwell, especially in children

Causes and risk factors

Periorbital cellulitis is usually caused by bacteria entering or spreading into the tissue around the eyelid.

The infection may begin after:

Sometimes there is no obvious starting point.

Several types of bacteria can cause the infection, including bacteria that commonly live on the skin or in the nose and throat. The likely bacteria may differ depending on how the infection began and local patterns of antibiotic resistance.

Children may be at greater risk because sinus and upper respiratory infections are common during childhood. Eczema or another condition that damages the skin barrier can also make it

easier for bacteria to enter. A weakened immune system may increase the risk of a more serious infection.

Periorbital cellulitis is not caused by poor eyesight, screen use, or eye strain.

- A scratch, cut, insect bite, or other break in the skin
- An infected eyelid gland or nearby skin infection
- Sinusitis, which is infection or inflammation in the spaces around the nose
- An infection of the tear drainage system
- Surgery or injury near the eye

Diagnosis

A clinician diagnoses periorbital cellulitis by asking how the swelling began and examining the eyelid, eye, face, and general health. There is no single blood test that confirms every case.

The examination checks:

The main aim is to distinguish periorbital cellulitis from orbital cellulitis. This can be difficult when swelling prevents a full eye examination, particularly in a young child.

A CT scan may be needed if orbital cellulitis is suspected, the examination is unclear, there are signs of an abscess, or the infection is not improving as expected. CT creates detailed images of the eye socket and sinuses. MRI may sometimes be used instead, particularly when more detail about soft tissue or possible spread is needed.

Blood tests are not always necessary in mild cases. They may be used when someone has a fever, appears significantly unwell, needs hospital care, or has a weakened immune system. If there is an open wound or drainage, a sample may be tested to identify the bacteria.

- Vision in each eye
- Eye movements and whether they cause pain
- Whether the eye is pushed or bulging forward
- Pupil reactions
- Eyelid swelling, redness, warmth, and tenderness
- Fever and other signs of illness
- Possible wounds, bites, sinus symptoms, or dental infection

Treatment and management

Periorbital cellulitis is treated with antibiotics. The choice and method of treatment are based on age, severity, likely source, local bacterial resistance, allergies, and whether deeper infection can be confidently excluded.

A mild infection may be treated at home with antibiotics taken by mouth if the person is otherwise well and reliable follow-up is available. It is important to take the medicine exactly as directed and complete the prescribed course unless the prescribing clinician advises otherwise.

Hospital treatment may be recommended when:

In hospital, antibiotics may be given into a vein. An eye specialist, ear, nose and throat specialist, or paediatric team may be involved. Surgery is not usually needed for uncomplicated periorbital cellulitis. It may be required if imaging finds a deeper abscess or another source that needs drainage.

A cool, clean compress can sometimes ease discomfort, but it does not treat the infection. Avoid squeezing a spot or swollen area near the eye. Do not use leftover antibiotics or someone else's eye drops. Antibiotic eye drops alone do not usually treat an infection within the eyelid tissue.

Follow-up is an important part of treatment. A clinician will often want to reassess the eye within a short period, commonly within 24 to 48 hours. Seek earlier reassessment if symptoms worsen.

- The infection is moderate or severe
- The person is very young or generally unwell
- Oral medicine cannot be taken or kept down
- The immune system is weakened
- The diagnosis is uncertain
- Orbital cellulitis cannot be excluded
- Symptoms are worsening or not responding to initial treatment

Complications

Most cases clear without lasting problems when treated promptly.

The main concern is spread behind the orbital septum, causing orbital cellulitis. A deeper infection can lead to an abscess, which is a pocket of pus, and can place pressure on the eye

and its nerves.

Uncommon but serious complications include damage to vision and spread of infection to nearby bones, the bloodstream, or areas around the brain. Cavernous sinus thrombosis is a rare blood clot in a large vein behind the eyes. Meningitis is infection of the protective layers around the brain and spinal cord.

These complications are not typical of straightforward periorbital cellulitis. The purpose of close monitoring is to identify warning signs early.

Prevention

Periorbital cellulitis cannot always be prevented. It may follow a minor skin break or sinus infection that was not predictable.

You can reduce some risks by gently cleaning cuts and grazes near the eye, avoiding rubbing or picking damaged skin, and washing your hands before touching the face. Follow the recommended care plan for eczema or other skin conditions that cause cracking.

Do not squeeze styes, boils, or infected spots near the eye. Seek medical advice if redness from a wound or skin infection is spreading.

Managing recurring sinus, tear-duct, dental, or eyelid problems may reduce repeated infections. Staying up to date with routine vaccinations also helps protect against some bacteria that can cause serious infections, although vaccination does not prevent every case of periorbital cellulitis.

Living with it and what to expect

With effective treatment, pain, fever, and redness often begin improving within the first couple of days. Eyelid swelling can take longer to settle completely. The skin may remain slightly discoloured or puffy for several days after the infection starts to improve.

The edge of redness may occasionally look more noticeable soon after treatment begins. What matters is the overall pattern: worsening swelling, new pain with eye movement, vision changes, persistent fever, or increasing illness needs prompt reassessment.

Rest, fluids, and age-appropriate pain relief may help during recovery. Follow the instructions supplied with any medicine, and check with a pharmacist or clinician if you are unsure whether a pain medicine is suitable.

Most people return to their usual activities after they feel well and the swelling has improved.

Periorbital cellulitis itself is not usually passed directly from person to person, but good hand hygiene is sensible because some bacteria and respiratory infections can spread.

The condition does not usually cause long-term eye problems. It can return, especially when there is an ongoing source such as recurring sinusitis, eyelid inflammation, eczema, or a tear-duct problem. Repeated episodes may lead to further assessment for an underlying cause.

When to get medical help

Arrange same-day medical assessment for a new red, hot, tender, or swollen eyelid, particularly when there is fever or the swelling affects only one eye. Children with suspected periorbital cellulitis should be assessed promptly because it can be difficult to distinguish it from a deeper infection at home.

If treatment has already started, contact the treating service promptly if symptoms are worsening or have not begun to improve within the expected review period. Keep any planned follow-up even if the eye looks better.

Go to an emergency department immediately if there is:

Call emergency services if the person is difficult to wake, collapses, has a seizure, develops severe breathing difficulty, or becomes suddenly confused.

- Reduced, blurred, or double vision
- Pain or difficulty when moving the eye
- An eye that appears to bulge forward
- Severe headache, repeated vomiting, unusual sleepiness, or confusion
- Rapidly increasing swelling or severe pain
- A person who appears seriously unwell
- Swelling so severe that the eye cannot be properly assessed

Common questions

Is periorbital cellulitis the same as orbital cellulitis?

No. Periorbital cellulitis affects the eyelid and tissue in front of the eye socket. Orbital cellulitis affects deeper tissue behind that boundary. Orbital cellulitis is more likely to cause painful or restricted eye movement, reduced vision, double vision, or a bulging eye.

Can periorbital cellulitis spread to the eye socket?

It can, although most treated cases do not. This is why prompt assessment and follow-up are important. New vision changes, pain with eye movement, or bulging of the eye require emergency care.

Is periorbital cellulitis contagious?

The cellulitis itself is not usually spread directly to another person. However, bacteria from skin drainage or an infection of the nose and throat may spread through contact. Handwashing and avoiding shared towels can help reduce this risk.

How long does periorbital cellulitis take to go away?

Many people begin to feel better within 24 to 48 hours of effective antibiotic treatment, but visible swelling may take several more days to resolve. Recovery can take longer if the infection was severe or came from a deeper sinus infection.

Can a child go to school with periorbital cellulitis?

A child should stay home while feverish, significantly unwell, or unable to take part comfortably. Return also depends on the source of the infection and local school rules. The clinician assessing the child can advise when return is reasonable.

Can periorbital cellulitis come back?

Yes. Recurrence is possible, particularly with repeated sinus infections, eczema, eyelid inflammation, or tear-drainage problems. Repeated episodes should be discussed during routine follow-up so an underlying source can be considered.

Sources

- Royal Children's Hospital Melbourne. Clinical Practice Guidelines: Periorbital and orbital cellulitis . Clinical guideline for assessment, red flags, imaging, and treatment
- British Society for Antimicrobial Chemotherapy. Paediatric Pathways: Pre-septal and postseptal cellulitis pathway . Hospital assessment and management pathway for children
- Merck Manual Professional Edition. Preseptal and Orbital Cellulitis . Overview of symptoms, diagnosis, imaging, complications, and treatment
- Lee S, Yen MT. Management of preseptal and orbital cellulitis . Saudi Journal of Ophthalmology. 2011;25(1):21-29. doi:10.1016/j.sjopt.2010.10.004
- Carlisle RT, Digiovanni J. Differential Diagnosis of the Swollen Red Eyelid . American Family Physician. 2015;92(2):106-112