CONDITION

Orbital pseudotumor

Orbital pseudotumor is unexplained inflammation of tissues within the eye socket.

WHAT IT IS
Inflammation of tissues within the eye socket

BODY SYSTEM
Eyes and eye sockets

MAIN SYMPTOMS
Eye pain, swelling, redness, double vision

WHAT CAUSES IT
Usually unknown; immune-driven inflammation is suspected

HOW IT IS DIAGNOSED
Examination, orbital imaging, blood tests, sometimes biopsy

MAIN TREATMENT
Corticosteroids; immune-modifying treatment for relapses

CAN IT BE CURED?
Sometimes - single episodes can resolve completely

IS IT AN EMERGENCY?
Sometimes - sudden vision change needs emergency assessment

LONG-TERM OUTLOOK
Often good, though relapses or lasting damage can occur

Overview

Orbital pseudotumor is inflammation inside the orbit, the bony socket that contains the eye, its muscles, nerves, fat, and tear gland. It can affect one area or several tissues at once.

Despite its name, orbital pseudotumor is not a tumor or cancer. "Pseudo" means false. The name came from the way swollen tissue can resemble a mass on an eye scan. Specialists now often call it idiopathic orbital inflammation or nonspecific orbital inflammation . Idiopathic means that no specific cause has been found.

The inflammation can push the eye forward, restrict eye movement, and cause pain or swelling. If it affects the optic nerve, which carries visual information to the brain, sight may be threatened. Prompt assessment matters because infections, thyroid eye disease, immune conditions, and some cancers can cause similar symptoms.

Orbital pseudotumor may be a single episode, a recurring condition, or less commonly a long-lasting form that causes scar-like tissue. It can occur in adults and children.

Symptoms

Symptoms often develop over hours or days, although some forms progress more slowly. One eye is commonly affected, but inflammation can occur in both eye sockets.

Possible symptoms include:

Symptoms partly depend on which tissue is inflamed. Inflammation of an eye muscle often causes painful movement and double vision. Inflammation near the tear gland may cause swelling at the outer edge of the upper eyelid. Inflammation deep at the back of the socket may affect the optic nerve and vision without causing much visible swelling.

These symptoms are not specific to orbital pseudotumor. Orbital cellulitis, an infection in the eye socket, may look similar and requires urgent treatment. Thyroid-related inflammation and other conditions can also resemble it.

- Pain around or behind the eye, sometimes worse with eye movement
- Swollen or red eyelids
- Redness of the white of the eye
- An eye that appears pushed forward
- Double vision or reduced eye movement
- Blurred or reduced vision
- Headache or a feeling of pressure behind the eye
- Drooping of the upper eyelid
- Swelling near the outer upper eyelid if the tear gland is involved

Causes and risk factors

In most cases, the exact cause is unknown. The inflammation appears to involve an abnormal immune response, but orbital pseudotumor is not always linked to a recognised autoimmune condition.

The diagnosis is usually made only after other causes of orbital inflammation have been considered. Conditions that can produce similar findings include:

When testing identifies one of these causes, the inflammation is no longer considered idiopathic orbital inflammation. Treatment and follow-up may then be different.

No lifestyle choice has been shown to cause orbital pseudotumor. It is not contagious, and it cannot spread from one person to another.

- Thyroid eye disease
- Infection in the eye socket or nearby sinuses
- IgG4-related disease, an immune condition that can cause swollen or scarred tissue
- Sarcoidosis, which causes clusters of inflammatory cells
- Granulomatosis with polyangiitis, a condition that inflames blood vessels
- Inflammation of the eye wall or nearby tissues
- Lymphoma and other growths in the eye socket

Diagnosis

There is no single test that confirms every case. Diagnosis combines an eye examination, imaging, and tests to exclude conditions that can look similar.

An ophthalmologist, a doctor who specialises in eye care, may check:

A computed tomography, or CT, scan can show swelling, enlarged eye muscles, or inflammation around the eye. Magnetic resonance imaging, or MRI, gives more detailed views of soft tissues and the optic nerve. Imaging can support the diagnosis, but the scan appearance alone does not prove that the condition is orbital pseudotumor.

Blood tests may look for thyroid problems, infection, or signs of specific immune conditions. The tests selected depend on the symptoms, examination, and scan findings.

Some people need a biopsy. During a biopsy, a specialist removes a small tissue sample for examination under a microscope. This may be recommended when the inflammation has an unusual appearance, develops slowly without pain, returns repeatedly, or does not respond as expected to treatment. A biopsy can help rule out cancer, infection, IgG4-related disease, and other specific causes.

A quick improvement with corticosteroids like prednisone or hydrocortisone can support the diagnosis, but it does not confirm it. Other conditions, including some lymphomas, may also improve temporarily with steroids.

- Vision in each eye

- Colour vision and pupil reactions
- Eye pressure
- Eye position and movement
- Eyelid and surface swelling
- The retina and optic nerve at the back of the eye

Treatment and management

Treatment aims to control inflammation, protect vision, relieve pain, and preserve normal eye movement. The approach depends on the tissues involved, the severity of symptoms, and whether the condition has returned.

Corticosteroids are commonly used for significant orbital pseudotumor. These medicines reduce immune activity and inflammation. They may be given by mouth or through a vein when symptoms are severe. Treatment is usually reduced gradually rather than stopped suddenly.

Symptoms may begin to improve quickly, but the inflammation can return while corticosteroids are being reduced or after treatment ends. Corticosteroids can also cause side effects, especially with repeated or prolonged use. These may include mood or sleep changes, raised blood sugar, higher blood pressure, infection risk, bone thinning, and eye problems. Monitoring is therefore important.

Mild, limited inflammation may sometimes be managed with close observation or anti-inflammatory pain medicine. This is not suitable when vision, the optic nerve, or eye movement is at risk.

If the condition returns, does not respond adequately, or requires repeated corticosteroid treatment, specialists may consider other options. These include medicines that modify the immune response, such as methotrexate, mycophenolate, azathioprine, or certain biological treatments. These medicines require specialist supervision and blood-test monitoring.

Low-dose radiation treatment is occasionally used for persistent inflammation when other treatment is unsuitable or ineffective. Surgery is not usually the main treatment, but it may be needed to obtain a biopsy, relieve pressure on threatened structures, or manage a localised area of abnormal tissue.

Any identified underlying condition is treated directly rather than managed as unexplained orbital pseudotumor.

Complications

Most complications result from severe inflammation, pressure within the eye socket, repeated episodes, or scarring.

Possible complications include:

The sclerosing form, in which inflammation produces firm scar-like tissue, can be harder to treat and may cause more lasting problems. Early recognition of vision or optic-nerve changes gives the best opportunity to prevent permanent damage.

- Damage to the optic nerve and permanent loss of vision
- Lasting double vision or restricted eye movement
- Exposure and drying of the cornea because the eye cannot close fully
- Scar-like thickening of orbital tissues
- Changes in eye position or eyelid appearance
- Recurrence after treatment
- Side effects from corticosteroids or other immune-modifying medicines

Prevention

Orbital pseudotumor usually cannot be prevented because its cause is unknown. There is no proven diet, supplement, exercise plan, or lifestyle change that prevents a first episode.

Taking treatment as directed and attending eye follow-up may help detect returning inflammation before it causes complications. This does not guarantee that another episode will be prevented.

If testing finds a specific underlying inflammatory condition, controlling that condition may reduce further orbital inflammation.

Living with it and what to expect

Some people have one episode that resolves completely. Others experience inflammation again during treatment reduction or months to years later. A smaller group develops persistent inflammation or scar-like changes.

Pain and swelling may improve within days of starting effective treatment. Double vision, eye movement, and visible swelling can take longer to recover. If tissues have become scarred or

the optic nerve has been damaged, some changes may remain even after the active inflammation has settled.

Follow-up usually includes repeat checks of vision, colour vision, pupils, eye movement, and eye position. Further imaging may be needed if symptoms do not improve, return, or change in character.

During recovery, double vision or reduced vision may affect driving, work, reading, and depth perception. Temporary adjustments may be needed until it is clear how well eye function will recover. Prism lenses or other eye treatments may help some people with persistent double vision.

Many people keep useful vision and return to their usual activities after treatment. However, the course cannot be predicted from the first symptoms alone. Recurrence, the location of inflammation, treatment response, and whether another condition is found all influence the long-term outlook.

When to get medical help

Seek emergency eye care or go to an emergency department if you develop:

These symptoms can mean the optic nerve or cornea is at risk, or that an infection may be present.

Arrange prompt medical assessment for new eye pain, swelling, redness, bulging, or double vision, even if sight seems normal. These symptoms need examination because several orbital conditions look alike.

If you have previously had orbital pseudotumor, contact your eye-care team promptly if familiar symptoms return. Routine follow-up remains important when symptoms are stable, particularly during corticosteroid reduction or immune-modifying treatment.

- Sudden or rapidly worsening loss of vision
- New dimming of colours or a dark area in your sight
- Rapidly increasing eye swelling or bulging
- Severe eye pain with reduced eye movement
- Eye swelling with fever, vomiting, marked illness, or confusion
- Inability to close the eye, especially if the surface becomes painful or cloudy

Common questions

Is orbital pseudotumor cancer?

No. It is inflammation, not cancer. However, some cancers can resemble orbital pseudotumor on examination or imaging. A biopsy may be needed if the findings are unusual or treatment does not work as expected.

Can orbital pseudotumor go away completely?

Yes, a single episode can resolve completely, especially when treated promptly. Some people have a recurrence or develop persistent inflammation. Lasting effects are more likely if the optic nerve has been injured or the tissues have become scarred.

Can orbital pseudotumor come back?

Yes. It may return while corticosteroid treatment is being reduced or after a symptom-free period. Returning symptoms need reassessment rather than restarting leftover medicine, because infection and other conditions can look similar.

How long does recovery take?

Pain and swelling may start improving within days of effective treatment. Eye movement, double vision, and changes in eye position may take weeks or longer. Recovery is slower when inflammation has been severe, repeated, or associated with scarring.

Is orbital pseudotumor an autoimmune condition?

It appears to involve immune-driven inflammation, but most cases are not linked to one clearly defined autoimmune condition. Testing may reveal a specific immune disorder in some people. If that happens, the condition is treated according to the identified cause.

Can orbital pseudotumor affect both eyes?

Yes, although one eye is affected more often. Involvement of both eye sockets may lead clinicians to look especially carefully for thyroid eye disease, IgG4-related disease, or another body-wide inflammatory condition.

Sources

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