OIUF THE OCULAR IMMUNOLOGY AND UVEITIS FOUNDATION

Dedicated to Eye Disease Cure and Education

Scleritis

Arash Maleki, MD; C. Stephen Foster, MD, FACS, FACR Revised May 2026

What is scleritis?

Scleritis is inflammation of the tough, white outer structural wall of the eyeball, the sclera. The sclera is made of collagen and is continuous with the cornea, the clear window through which we see that makes up the front wall of the eye. Blood vessels run along and sometimes through the sclera and can contribute to inflammation. The thin outer layer of the sclera, the episclera, can also become inflamed; however, episcleritis is typically less severe and less symptomatic than scleritis. Swelling and severe inflammation of sclera can occur in one or both eyes, can affect surrounding tissues, and be quite dramatic and sight-threatening. The distinction between episcleritis and scleritis is of particular concern to the ophthalmologists – episcleritis is a benign condition whereas scleritis can be a presenting sign of dangerous, and potentially fatal, underlying systemic disease.

What are the different types of scleritis?

Scleritis can be either anterior, in the front of the eye and visible during eye exam, or posterior, behind or around the eye and not visible during eye exam. Anterior scleritis can be sectoral or diffuse, depending on how much of the visible sclera is affected. It can also be nodular, presenting as a focal mound or elevation of inflamed tissue. Necrotizing scleritis is considered the most severe form of scleritis with scleral necrosis, and can cause dangerous thinning, potentially leading to perforation and loss of vision and the eyeball. A subtype of anterior scleritis specifically seen in patients with long-standing rheumatoid arthritis is scleromalacia perforans. It presents with significant scleral thinning, through which the underlying uveal tissue becomes visible, with minimal or no inflammation. Interestingly, despite the marked thinning, spontaneous perforation is uncommon. However, perforation may occur following minimal trauma. Posterior scleritis can range from mild to severe, sight-threatening inflammation of the posterior sclera and may be mistaken for retinal detachment or optic nerve disease.

What Causes scleritis?

Scleritis may be idiopathic, or of unknown cause to the ophthalmologist, in 50% of the patients despite diagnostic measures. Autoimmune and infection are the two main causes, though trauma can be an inciting factor. Deposition of immune-complexes, or particles comprised of antibodies bound to a sclera molecule (antigen), drive inflammation in a given area or sclera. Rheumatoid arthritis is the systemic disease most commonly associated with scleritis. However, many collagen-vascular diseases may also include scleritis as part of their disease spectrum. Indeed, inflammation of the sclera can sometimes be a presenting manifestation of a potentially life-threatening systemic disease. Sometimes inflammation in the eye precedes systemic extraocular manifestations by months or even years. This is just one of the many reasons why it is critical for patients to undergo regular evaluation by ophthalmologists. Serologic evaluation is typically performed to search for possible autoimmune or infectious causes. Scleral biopsy with microscopic evaluation of prepared tissue can give important information on specific patterns of inflammation seen and the presence or absence of certain infectious organisms.

Symptoms of scleritis

- Dard redness
- Pain and tenderness
- Blurry vision
- Lid swelling
- Light sensitivity

Redness (with a purple hue) may be isolated to a particular area of the sclera, or diffuse. Pain can be excruciating and made worse with eye movement and any touch. Vision can be affected if swelling from inflammation affects surrounding tissues such as cornea, anterior chamber, choroid, retina, or optic nerve. Light sensitivity is not usually a symptom unless cornea (keratitis) is also involved.

What other medical conditions are associated with scleritis?

As stated above, scleritis can be a sign of more ominous systemic diseases. Non-infectious causes include:

- Rheumatoid arthritis (RA)
- Systemic Lupus Erythematosus (SLE)

- Inflammatory Bowel Disease (IBD)
- Relapsing Polychondritis (RP)
- Ankylosing Spondylitis (AS)
- Gout
- Reactive arthritis (RA)
- Psoriatic arthritis (PA)
- Granulomatosis with Polyangiitis (formerly Wegener's Granulomatosis) (GPA)
- Microscopic polyangiitis (MPN)
- Churg-Strauss syndrome (CSS)
- Polyarteritis nodosa (PAN)
- Sarcoidosis

Infectious causes include:

- Herpes virus family (herpes simplex virus 1, herpes simplex virus 2, varicella zoster virus, Ebstein Barr virus)
- Syphilis
- Bacteria
- Tuberculosis
- Fungi
- Parasites

How is scleritis diagnosed?

As with all ocular inflammation, a careful history and review of systems should be performed. Attention is given to possible systemic disease, with targeted symptoms elicited on review of systems, such as joint swelling, rash, and abdominal pain. Examination reveals inflammation of deep scleral vessels, or areas of necrosis (cell death) and scleral thinning, which can be photographed. Vasoconstrictor eye drops may help differentiate scleral from episcleral inflammation when the diagnosis is uncertain. Only episcleritis typically shows blanching and improvement in redness with these agents. Posterior scleritis (posterior scleral inflammation) is

usually not directly visible on examination, although significant inflammation may cause outward bulging of the globe. Diagnosis often requires imaging, such as ultrasound, CT scan, or MRI to detect inflammatory changes posterior to the eye. Occasionally, secondary retinal or optic nerve abnormalities may be observed due to posterior scleritis.

What are the complications of scleritis?

The most dreaded complication of scleritis is scleral perforation, which can lead to dramatic vision loss, infection, and loss of the eye. Damage to other inflamed areas, such as cornea or retina, may leave permanent scarring and cause blurring. Chronic pain can be debilitating if not treated. Patients may suffer complications from treatment more often than disease itself, with development of cataract or secondary glaucoma from inflammation or chronic corticosteroid use.

What is the treatment for scleritis?

First-line treatment should aim to rapidly control inflammation. Antibiotic or antiviral therapy can be used when an infectious cause is shown or even highly suspected, along with topical corticosteroids for some infections (never fungal infections). For non-infectious causes, oral or topical corticosteroids can be used, as well as oral or topical non-steroidal anti-inflammatory drugs (NSAIDs). Periocular corticosteroid injection is a debated subject, as some fear that areas of necrosis are at higher risk for melt and perforation, though evidence suggests that treatment of non-necrotizing scleritis with injections is effective. Intravenous steroids can also be used in very severe cases. Of course, long-term corticosteroid therapy should be avoided due to its ocular and systemic serious adverse effects.

Immunomodulatory therapy (IMT) is the mainstay of treatment for chronic or recurrent non-infectious scleritis. IMT requires regular monitoring of blood counts, as well as kidney and liver function, along with surveillance for other systemic adverse effects. Surgery to repair perforated sclera, or bolster dangerously thinned sclera, can be done with prepared scleral grafts, or other similar available sterile tissue.