Similar to uveitis, scleritis can also be classified as noninfectious or infectious. The latter is frequently associated with surgery or trauma. This distinction is critical since aggressive inadvertent use of corticosteroids or immunomodulatory therapy in cases of an underlying infectious etiology can lead to devastating consequences.

**Pathophysiology**

Noninfectious scleritis is an immune-mediated condition frequently involving the small blood vessels of the sclera. Pathophysiologic mechanisms vary according to the type of scleritis and underlying associated systemic disease. Onset is usually with infiltration of inflammatory cells in the sclera and episclera, mediated by proinflammatory cytokines and intercellular adhesion molecules.

The diffuse anterior subtype of scleritis is associated with a nongranulomatous response involving macrophages, lymphocytes, and plasma cells, which often assume a perivascular distribution.

In nodular scleritis, and particularly in necrotizing scleritis, the inflammatory response is more significant and specific, involving direct antibody-mediated damage (type II hypersensitivity), deposition of immune complexes triggering a type III hypersensitivity reaction, or a delayed (type IV) hypersensitivity response mainly characterized by granulomatous inflammation of the sclera. Inflammation may progress to an essentially vasculitic response, culminating in fibrinoid necrosis of the vessel wall and, eventually, necrosis of the sclera, episclera, conjunctiva, and cornea. Proinflammatory cytokines and activated metalloproteinases may play a role in local scleral and corneal damage.


Epidemiology

Scleritis does not show geographic or racial differences. The incidence of scleritis is estimated at 3.4–4.1 per 100,000 persons and prevalence at 5.2 per 100,000 persons in the United States (US). Scleritis is more common in females. In tertiary centers, however, scleritis comprises 0.1%–2.6% of newly referred cases. Nonnecrotizing anterior scleritis is the most common form of the disease. While noninfectious scleritis is more common in the US, it is important to consider infectious scleritis, including herpetic, nocardial, mycobacterial, and fungal infection, in patients with risk factors based on medical and surgical history and geography.


Clinical Presentation

Individuals with scleritis usually present with tenderness and dull pain in the affected eye and periocular area. The pain may worsen with eye movements and radiate to the face, cheek, and jaw. When cornea or posterior sclera is involved, vision may be affected.

The eye with scleritis typically shows scleral edema and intense hyperemia (Fig 7-1), leading to a characteristic violaceous hue on external examination. Slit-lamp examination characteristically discloses marked dilation of deep episcleral plexus, which is displaced outward by scleral edema/inflammatory infiltration. This is important in the distinction from episcleritis, in which no scleral edema is found and only superficial episcleral plexus is affected. Careful utilization of a topical vasoconstrictor (eg, phenylephrine drops) to bleach superficial blood vessels may facilitate this assessment and help distinguish episcleritis, in which the redness would blanch with phenylephrine, from scleritis. Close

![Figure 7-1](image-url) Diffuse anterior scleritis, with dilation of deep episcleral vessels before (A) and after (B) instillation of phenylephrine. (Courtesy of H. Nida Sen, MD/National Eye Institute.)