and Europe. **It is a chronic inflammatory disorder of large to small-sized arteries that principally affects arteries in the head**—especially the temporal arteries—but also the vertebral and ophthalmic arteries. Ophthalmic arterial involvement can lead abruptly to permanent blindness; consequently, giant cell arteritis is a medical emergency requiring prompt recognition and treatment. Lesions also occur in other arteries, including the aorta (giant cell aortitis).

Pathogenesis. Most evidence suggests that giant cell arteritis stems from a T-cell–mediated immune response against one of handful of vessel wall antigens that drives subsequent proinflammatory cytokine production (particularly TNF). Anti-endothelial cell and anti-smooth muscle cell antibodies can also be demonstrated in roughly two thirds of patients, although it is unclear whether these are causal or a consequence of other immune injury. A cellular immune etiology is supported by the characteristic granulomatous response, a correlation with certain MHC class II haplotypes, and a prompt therapeutic response to steroids. The extraordinary predilection for a single vascular site (temporal artery) remains unexplained.

MORPHOLOGY

Involved arterial segments develop **intimal thickening** (with occasional thromboses) **that reduces the luminal diameter**. Classic lesions exhibit medial **granulomatous inflammation** centered on the internal elastic lamina that produce **elastic lamina fragmentation**; there is an infiltrate of T cells (CD4+ > CD8+) and macrophages. Although multinucleated giant cells are seen in approximately 75% of adequately biopsied specimens (Fig. 11-24), granulomas and giant cells can be rare or absent. Inflammatory lesions are only focally distributed along the vessel and long segments of relatively normal artery may be interposed. The healed stage is marked by medial attenuation and scarring with intimal thickening, typically with residual elastic tissue fragmentation and adventitial fibrosis.

Clinical Features. Giant cell arteritis is rare before age 50. Symptoms may be only vague and constitutional—fever, fatigue, weight loss—or there may be facial pain or headache, most intense along the course of the superficial temporal artery, which can be painful to palpation. Ocular symptoms (associated with involvement of the ophthalmic artery) appear abruptly in about 50% of patients; these range from diplopia to complete vision loss. Diagnosis depends on biopsy and histologic confirmation. However, because giant cell arteritis can be extremely focal within an artery, adequate biopsy requires at least a 1-cm segment; even then, a negative biopsy result does not exclude the diagnosis. Corticosteroids or anti-TNF therapies are typically effective.

Takayasu Arteritis

This is a granulomatous vasculitis of medium and larger arteries characterized principally by ocular disturbances and marked weakening of the pulses in the upper extremities (hence the name *pulseless disease*). Takayasu arteritis manifests with transmural fibrous thickening of the aorta—particularly the aortic arch and great vessels—with severe luminal narrowing of the major branch vessels (Fig. 11-25). Takayasu aortitis shares many attributes with giant cell aortitis, including clinical features and histology. Indeed, the distinction is typically made based on the age of the patient: in patients older than 50, the diagnosis is giant cell aortitis, while in those younger than 50, it is Takayasu

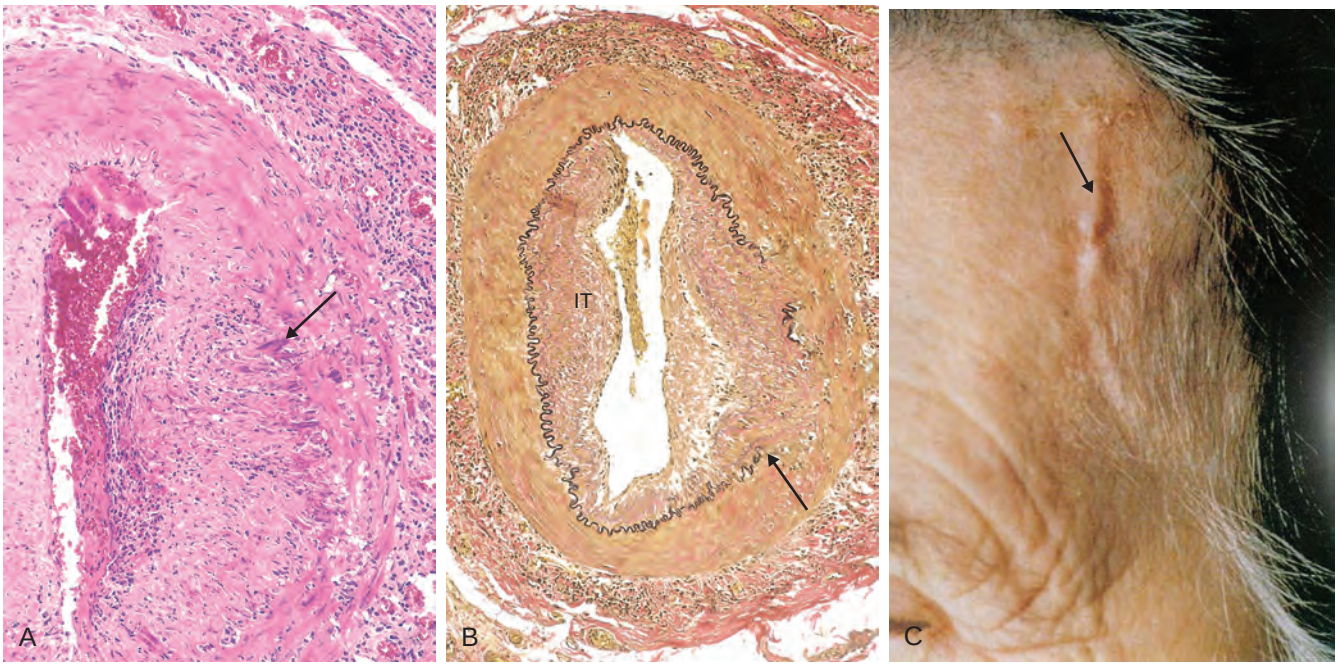

Figure 11-24 Giant cell (temporal) arteritis. **A,** Hematoxylin and eosin stain of section of temporal artery showing giant cells at the degenerated internal elastic lamina in active arteritis *(arrow).* **B,** Elastic tissue stain demonstrating focal destruction of internal elastic lamina *(arrow)* and intimal thickening (IT) characteristic of long-standing or healed arteritis. **C,** The temporal artery of a patient with classic giant cell arteritis shows a thickened, nodular, and tender segment of a vessel on the surface of head *(arrow).* (**C,** From Salvarani C, et al. Polymyalgia rheumatica and giant-cell arteritis. N Engl J Med 347:261, 2002.)

www.PTools.ir