Temporal artery biopsy

Superficial temporal artery biopsy is the primary modality for establishing a diagnosis of giant cell arteritis.

Indications and timing

Current recommendations: temporal artery biopsy in all patients suspected of having GCA. May be controversial. Arguments for: toxicity of a long course of steroids in an elderly patient, and a high rate of false initial responses of other illnesses to steroids. Arguments against: since a negative biopsy cannot exclude the diagnosis, cases with a negative biopsy but a strong clinical suspicion are often treated as though they have GCA. In general, however, the biopsy is considered prudent before embarking on a long course of high-dose steroid therapy.

Complications of biopsy are rare and include bleeding, infection, and only in the setting of active vasculitis has scalp necrosis been reported (not linked to biopsy). In general, perform a biopsy before starting steroids if biopsy can be done immediately. Otherwise, start steroids to preserve vision and perform biopsy usually within 1 week (pathologic changes can be seen after more than 2 weeks of therapy, therefore do not withhold steroids to await biopsy).

Technique of temporal artery biopsy

Biopsy side of involvement if laterality exists. The yield is increased by removing a portion of the artery that is involved clinically (a tender or inflamed segment). Mark the frontal branch of the STA with a skin marker (spare the main trunk and parietal branch if possible). Infiltrate local anesthetic. The incision is made parallel to the artery and if possible behind the hairline. The incision is taken down to the fascia of the temporalis muscle, to which the STA is superficial.25 Optimal length of STA biopsy: 4–6 cm (if an abnormal segment of STA can be palpated, some say that a smaller biopsy to include this area may be sufficient, but this is probably unreliable as the muscle may be tender, etc.). Step-sectioning by a pathologist through the entire length of the biopsy specimen also increases the yield. Frozen sections can be performed. Biopsy of the contralateral side if the first side is negative (in cases where clinical suspicion is high) increases the yield only by 5–10%.