

Temporal Artery Duplex Ultrasound for Giant Cell Arteritis

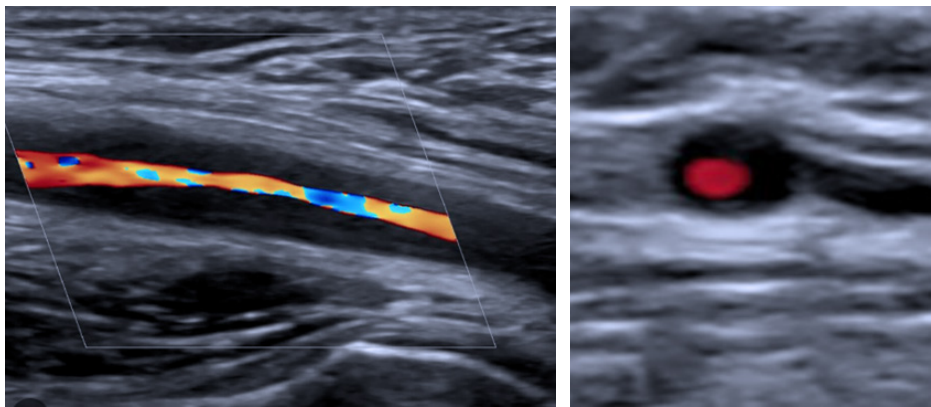


Giant cell arteritis (GCA) is a non-atherosclerotic, inflammatory condition that is the most common form of systemic vasculitis affecting patients over the age of 50. GCA typically affects the walls of medium and large size arteries and requires a prompt diagnosis and treatment to avoid permanent vision loss.

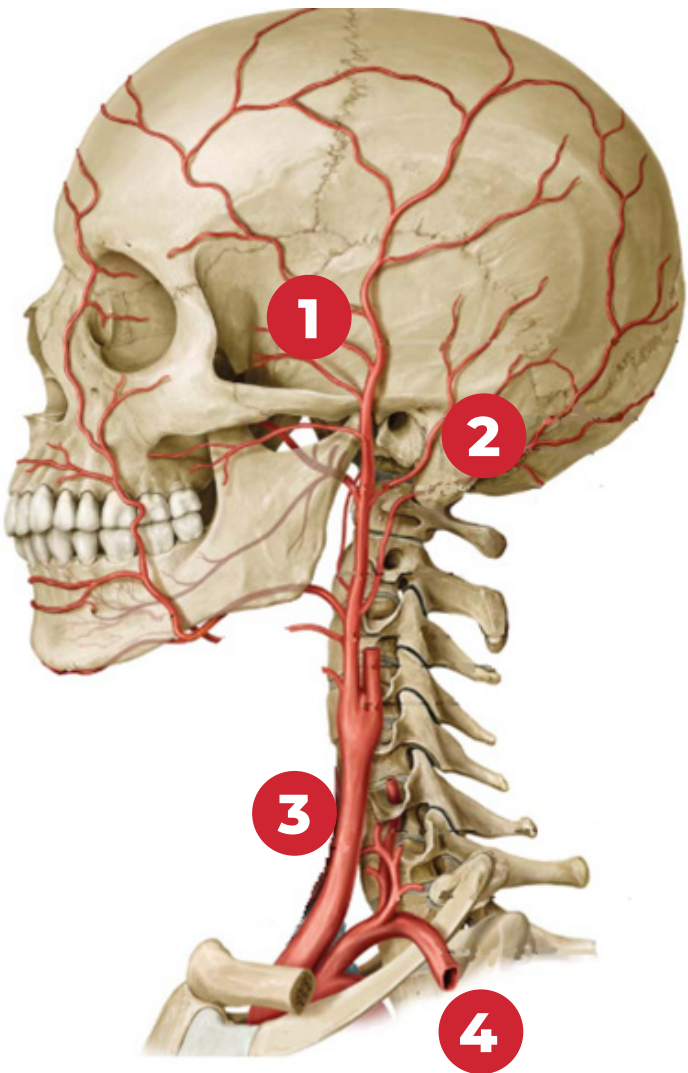
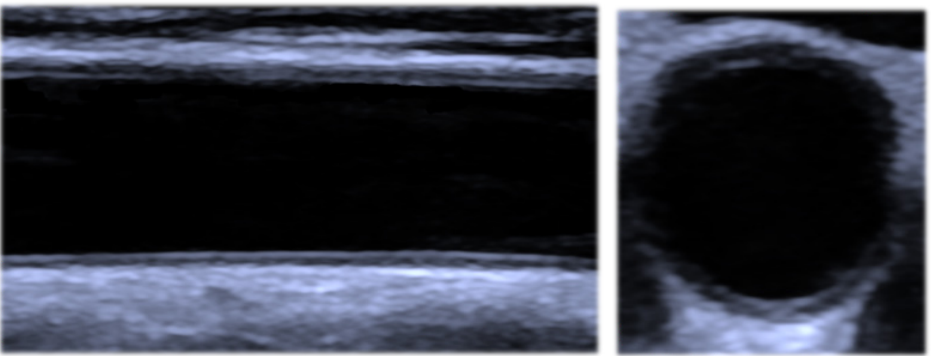
ULTRASOUND APPEARANCES

GCA causes oedema to occur particularly in the medial layer of the arterial wall, potentially extending into the intima and the adventitia. This results in **homogeneous, hypoechoic, concentric wall thickening** termed the “**halo sign**”.^{1,2,3}

Giant cell arteritis



Normal artery reference



Diagnostic Features

Tip 1

Compressing the temporal artery (TA) can help visualise the ‘halo’. A normal TA will flatten/fully compress and an inflamed arterial wall will not.

Tip 2

Using intima media thickness (IMT) reference values can be useful in GCA diagnosis.^{1,4}

Vessel	IMT (mm)
Common TA	>0.44
Parietal/frontal TA branches	>0.35
Ax A, SCA, CCA	>1.1

What vessels to assess?

- 1 Superficial temporal arteries — parietal and frontal branches
- 2 Occipital arteries if clinically symptomatic
- 3 Common carotid arteries
- 4 Axillary arteries

Transducer selection

- Patient dependent — use the highest frequency possible
- For the typical patient — a hockey stick transducer ≥18MHz for temporal arteries and a linear transducer 12-3MHz for axillary and carotid arteries.

GCA IS CONSIDERED A MEDICAL EMERGENCY AND TIMELY ULTRASOUND IS ESSENTIAL TO PREVENT COMPLICATIONS.

PRESENTING SYMPTOMS¹

- acute onset of headaches
- painful/stiff joints
- systemic flu-like symptoms
- scalp tenderness
- jaw claudication
- visual disturbances

BE AWARE!

Glucocorticoid steroid treatment rapidly decreases the diagnostic ultrasound sensitivity in the diagnosis of GCA and may lead to a false negative or equivocal finding.



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