ULTRASOUND – TEMPORAL ARTERY DOPPLER

PURPOSE:
To evaluate temporal and axillary arteries for vasculitis (Giant Cell Arteritis).

SCOPE:
Applies to all US Doppler studies of the temporal arteries performed in Imaging Services / Radiology

BILLING CODE:
• 93882 Duplex scan of extracranial arteries; unilateral or limited study

INDICATIONS:
• Signs or symptoms of temporal arteritis (Headaches, vision loss, jaw pain, fever, fatigue and weakness).
• Abnormal lab values indicating vasculitis (eg. increased ESR, LFTs, Alk phos, IgG, complement)
• Prior history of vasculitis, polymyalgia rheumatic or other rheumatologic condition
• Abnormal findings on prior imaging

CONTRAINDICATIONS:
• No absolute contraindications

EQUIPMENT:
• Linear array transducer with frequency ranges greater than 9MHz.

PATIENT PREPARATION:
• None

EXAMINATION:
GENERAL GUIDELINES:
A complete examination includes temporal arteries. If necessary examination of axillary arteries. If carotid artery evaluation is needed, a dedication US Carotid order may be required.

EXAM INITIATION:
• Introduce yourself to the patient/family
• Verify patient identity using patient name and DOB
• Explain test
• Obtain patient history including symptoms. Enter and store data page
• Place patient in supine position.

TECHNICAL CONSIDERATIONS:
• Review any prior imaging.
• One of the most important signs is the “hypoechoic halo”, a rim of uniform hypoechogenicity surrounding a long segment of the artery.
• The halo may be best demonstrated with compressions.
• A halo thickness (from intimal to media) of 0.4 mm is sensitive though not specific. A thickness of 1.0 mm is highly predictive of arteritis.
Another important finding is areas of stenosis, which can be seen as areas of luminal narrowing with associated color Doppler aliasing. Occlusion can also be seen. Affected vessels may be significantly tortuous.

DOCUMENTATION:
- TEMPORAL ARTERIES
  - TRANSVERSE, both RIGHT and LEFT
    - Without/with color Doppler (dual screen):
      - Common superficial temporal arteries (prox; mid; distal)
      - Frontal branch
      - Parietal branch
    - Cine loop compression, without/with color Doppler (dual screen)
    - If hypoechoic halo identified, measure maximum thickness (one side of wall, outer to inner)
      - Confirm halo and assess length of affected vessel in LONG
    - If luminal narrowing/irregularity identified:
      - Use color Doppler to show turbulent flow/aliasing
      - Spectral Doppler waveform and peak velocity prior to, at, and beyond area of maximum stenosis.
    - At least one Duplex spectral Doppler waveform of each temporal artery
    - Additional Duplex Doppler waveforms of any suspected occluded segment
- AXILLARY ARTERIES
  - Repeat above assessment for each axillary artery if temporal arteries are found to be normal

PROCESSING:
- Review examination images and data
- Confirm data in Imorgon (if applicable)
- Document relevant history and any study limitations.

REFERENCES:
Halo Sign (without/with compression)

- A halo thickness (from intimal to media) of 0.4 mm is sensitive though not specific. A thickness of 1.0 mm is highly predictive of arteritis.

Luminal Irregularity
## CHANGE HISTORY:

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<th>DATE</th>
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<tr>
<td>Submission</td>
<td>Allyson LaSalle, RDMS, RVT</td>
<td>05-27-2020</td>
<td>Submitted</td>
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<td></td>
<td>Monica Morgan, RDMS, RVT</td>
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<tr>
<td>Approval</td>
<td>David Fetzer, MD</td>
<td>05-30-2020</td>
<td>Approved</td>
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<tr>
<td>Review</td>
<td></td>
<td></td>
<td>Reviewed</td>
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<tr>
<td>Revisions</td>
<td>David Fetzer, MD</td>
<td>6-10-2020</td>
<td>Specified need for at least one Duplex spectral waveform for each side</td>
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