INTRODUCTION:

Neck computed tomography angiography (CTA) uses a computerized analysis of x-ray images enhanced by contrast material injected into a peripheral vein. Neck CTA may be performed after initial carotid duplex imaging that does not provide adequate information or shows abnormal results. Neck CTA may be used for the evaluation of carotid body tumors and for post-operative evaluation of carotid endarterectomy.

Initial Clinical Reviewers (ICRs) and Physician Clinical Reviewers (PCRs) must be able to apply criteria based on individual needs and based on an assessment of the local delivery system.

INDICATIONS FOR NECK CTA:

For evaluation of vascular disease:
- For evaluation of patients with an abnormal ultrasound of the neck or carotid duplex imaging (e.g. carotid stenosis ≥ 60%, technically limited study, aberrant direction of flow in the carotid or vertebral arteries).
- For evaluation of head trauma in a patient with closed head injury for suspected carotid or vertebral artery dissection.

For evaluation of known or suspected tumor/mass:
- For evaluation of carotid body tumors, also called paragangliomas.
- For evaluation of pulsatile neck mass.

Pre-operative evaluation.

Post-operative/procedural evaluation (e.g. carotid endarterectomy):
- A follow-up study may be needed to help evaluate a patient’s progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

Indications for combination studies:

Neck CTA/Brain CTA:
- For evaluation of patients who have had a stroke or transient ischemic attack (TIA) within the past 2 weeks.
- For evaluation of known or suspected vertebrobasilar insufficiency (VBI) in patients with symptoms such as vision changes, vertigo, or abnormal speech.
• For evaluation of known or suspected carotid or cerebral artery occlusion in patients with a sudden onset of one-sided weakness, abnormal speech, vision defects or severe dizziness.
• For evaluation of head trauma in a patient with closed head injury for suspected carotid or vertebral artery dissection.
• For evaluation of pulsatile tinnitus for vascular etiology.

**Neck CTA/Brain CT:**
• Confirmed carotid stenosis of >60%, surgery or angioplasty candidate.

**ADDITIONAL INFORMATION RELATED TO NECK CTA:**

**CTA and Carotid Body Tumor** – Carotid body tumors are found in the upper neck at the branching of the carotid artery. Although most of them are benign they may be locally aggressive with a small malignant potential. Computed tomography angiography of carotid arteries may be performed using a multislice spiral CT scanner. The 3D volume-rendering reconstructions provide a selective visualization of the anatomic relationships among carotid body tumors, vessels, and surrounding osseous structures with good detail.

**Post-operative evaluation of carotid endarterectomy** – Carotid endarterectomy is a vascular surgical procedure that removes plaque from the carotid artery. CTA, with multiprojection volume reconstruction, is a non-invasive imaging modality that is an alternative to postoperative angiography following carotid endarterectomy. It allows the surgeon to get informative and comparative data.

**The Asymptomatic Carotid Atherosclerosis Study (ACAS):** The ACAS clinical trial is an often quoted study that demonstrated a 5-year reduction in stroke risk of asymptomatic patients with ≥ 60% carotid diameter reduction that underwent carotid endarterectomy compared to those who received medical treatment.
REFERENCES


Reviewed/Approved by Michael Pentecost, MD, Chief Medical Officer

3—Neck CTA 2017 Proprietary