“FOR CMS (MEDICARE) MEMBERS ONLY”

NATIONAL COVERAGE DETERMINATION (NCD) FOR COMPUTED TOMOGRAPHY:

Item/Service Description
A. General
Diagnostic examinations of the head (head scans) and of other parts of the body (body scans) performed by computerized tomography (CT) scanners are covered if medical and scientific literature and opinion support the effective use of a scan for the condition, and the scan is: (1) reasonable and necessary for the individual patient; and (2) performed on a model of CT equipment that meets the criteria in C below.

CT scans have become the primary diagnostic tool for many conditions and symptoms. CT scanning used as the primary diagnostic tool can be cost effective because it can eliminate the need for a series of other tests, is non-invasive and thus virtually eliminates complications, and does not require hospitalization.

Indications and Limitations of Coverage for NCD 221.0

B. Determining Whether a CT Scan Is Reasonable and Necessary
Sufficient information must be provided with claims to differentiate CT scans from other radiology services and to make coverage determinations. Carefully review claims to insure that a scan is reasonable and necessary for the individual patient; i.e., the use must be found to be medically appropriate considering the patient's symptoms and preliminary diagnosis.

There is no general rule that requires other diagnostic tests to be tried before CT scanning is used. However, in an individual case the contractor's medical staff may determine that use of a CT scan as the initial diagnostic test was not reasonable and necessary because it was not supported by the patient's symptoms or complaints stated on the claim form; e.g., "periodic headaches."

Claims for CT scans are reviewed for evidence of abuse which might include the absence of reasonable indications for the scans, an excessive number of scans or unnecessarily expensive types of scans considering the facts in the particular cases.
NIA CLINICAL GUIDELINE FOR BRAIN (HEAD) CTA:

INTRODUCTION:
Computed tomography angiography (CTA) is recognized as a valuable diagnostic tool for the management of patients with cerebrovascular disease. With its three-dimensional reconstructions, CTA can simultaneously demonstrate the bony skull base and its related vasculature. CTA use of ionizing radiation and an iodine-based intravascular contrast medium is a disadvantage when compared to magnetic resonance angiography (MRA) but it is quicker and requires less patient cooperation than MRA. CTA is much less invasive than catheter angiography which involves injecting contrast material into an artery.

INDICATIONS FOR BRAIN CTA:

For evaluation of known intracranial vascular disease:
- To evaluate known intracranial aneurysm or arteriovenous malformation (AVM).
- To evaluate known vertebral basilar insufficiency (VBI).
- To re-evaluate vascular abnormality visualized on previous brain imaging.
- For evaluation of known vasculitis.

For evaluation for suspected intracranial vascular disease:
- To screen for suspected intracranial aneurysm in patient whose parent or sibling has history of intracranial aneurysm. Note: If there is a first degree familial history, repeat study is recommended every 5 years.
- Screening for aneurysm in polycystic kidney disease, Ehlers-Danlos syndrome, fibromuscular dysplasia, neurofibromatosis, or known aortic coarctation.
- To evaluate suspected vertebral basilar insufficiency (VBI).
- To evaluate suspected arteriovenous malformation (AVM).
- For evaluation of suspected venous thrombosis (dural sinus thrombosis).
- Distinguishing benign intracranial hypertension (pseudotumor cerebri) from dural sinus thrombosis.
- For evaluation of pulsatile tinnitus for vascular etiology.
- For evaluation of suspected vasculitis with abnormal lab results suggesting acute inflammation or autoimmune antibodies.

Pre-operative evaluation for brain/skull surgery.

Post-operative/procedural evaluation:
- 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 Brain CTA/Neck CTA combination studies:
- For evaluation of patients who have had a stroke or transient ischemic attack (TIA) within the past 2 weeks.
- For evaluation of patients with a sudden onset of one-sided weakness, inability to speak, vision defects or severe dizziness.
- For evaluation of head trauma in a patient with closed head injury for suspected carotid or vertebral artery dissection.
ADDITIONAL INFORMATION RELATED TO BRAIN CTA:

**CTA for Evaluation of Aneurysm** – CTA is useful in the detection of cerebral aneurysms. The sensitivity of CTA to detect cerebral aneurysms ≤ 5 mm is higher than that with digital subtraction angiography (DSA). Most aneurysms missed with CTA are ≤ 3mm. Aneurysms in the region of the anterior clinoid process may extend into the subarachnoid space where they carry the threat of hemorrhage. CTA can help delineate the borders of the aneurysm in relation to the subarachnoid space and may help detect acute ruptured aneurysms. It may be used in the selection of patients for surgical or endovascular treatment of ruptured intracranial aneurysms.

**CTA for Screening of Patients whose Parent(s) or Sibling(s) have a history of aneurysm** – Data has suggested that individuals with a parent or sibling harboring an intracranial aneurysm are at increased risk of aneurysms. It is likely that multiple genetic and environmental risk factors contribute to the increased risk.

**CTA for Evaluation of Vertebral Basilar Insufficiency (VBI)** – Multidetector CT angiography (MDCTA) may be used in the evaluation of vertebral artery pathologies. The correlation between MDCTA and color Doppler sonography is moderate. CTA is used for minimally invasive follow-up after intracranial stenting for VBI. It enables visualization of the patency of the stent lumen and provides additional information about all brain arteries and the brain parenchyma.

**CTA for evaluation of Arteriovenous Malformation (AVM)** – A good correlation has been found between catheter angiography and CTA in the detection of arteriovenous malformations. CTA allows calculation of the volume of an AVM nidus and identifies and quantifies embolic material within it. CTA may be used for characterization and stereotactic localization before surgical resection or radiosurgical treatment of arteriovenous malformations.
REFERENCES


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