

## AmeriHealth Caritas Louisiana

<b>National Imaging Associates, Inc.*</b>	
<b>Clinical guidelines</b> TEMPORAL -BONE, MASTOID, ORBITS, SELLA, INTERNAL AUDITORY CANAL CT	<b>Original Date: September 1997</b>
<b>CPT Codes: 70480, 70481, 70482</b>	<b>Last Revised Date: May 2020</b>
<b>Guideline Number: NIA_CG_006 - 1</b>	<b>Implementation Date: <del>January 2021</del>TBD</b>

### GENERAL INFORMATION:

It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. All prior relevant imaging results, and the reason that alternative imaging (gold standard, protocol, contrast, etc.) cannot be performed must be included in the documentation submitted.

### INDICATIONS FOR ORBIT CT:

CT is preferred for visualizing bony detail and calcifications, MRI is superior for the evaluation of the visual pathways, globe, and soft tissues ([Hande, 2012](#); Kennedy, 2017; [Hande, 2012](#))

- Abnormal external or direct eye exam ([Hande, 2012](#)):
  - Exophthalmos (proptosis) or enophthalmos ([Aiyekomogbon, 2016](#))
  - Ophthalmoplegia with concern for orbital pathology (Stalcup, 2013)
  - Unilateral optic disk swelling ~~papilledema approve dedicated~~ ~~Orbits CT even if Brain CT approved~~ if MRI is contraindicated or cannot be performed (Hata, 2017; Margolin, 2019; Passi, 2013)
  - Documented ~~v~~visual ~~f~~field ~~d~~efect if MRI is contraindicated or cannot be performed ([Fadzil, 2013](#); [Sadun, 2011](#); Kedar, 2011; Prasad, 2012; [Sadun, 2011](#) - [Fadzil, 2013](#))
    - Unilateral or with optic disc abnormality **AND**
    - Not explained by an underlying diagnosis, glaucoma, or macular degeneration
  - Optic Neuritis if MRI is contraindicated or cannot be performed
    - With an atypical presentation, severe visual impairment or poor recovery following initial onset or treatment onset (CMSC, 2018; Voss, 2011)
- Orbital trauma
  - Physical findings of direct eye injury
  - Suspected orbital trauma with indeterminate X-ray
  - For further evaluation of a fracture seen on X-ray for treatment or surgical planning

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- Orbital or ocular mass/tumor, suspected, or known (Hande, 2012; Kedar, 2011)
- Clinical Suspicion of orbital infection (Gavito-Higuera, 2016; Kirsch, 2017)
- Clinical Suspicion of osteomyelitis (Arunkumar, 2011; Habib, 2016; Lee, 2016)
  - Direct visualization of bony deformity
  - Abnormal X-rays
- Clinical Suspicion of Orbital Inflammatory Disease (e.g., eye pain and restricted eye movement with suspected orbital pseudotumor) (Pakdaman, 2014)
- Congenital orbital anomalies (Tawfik, 2012)

#### COMBINATION OF STUDIES WITH ORBIT CT:

- Brain CT/Orbit CT if MRI is contraindicated or cannot be performed
  - ~~For approved indications as noted above and being performed in a child under 8 years of age who will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology (Lawson, 2000).~~
  - Unilateral papilledema-optic disk swelling/optic neuropathy of unclear etiology to distinguish between a compressive lesion of the optic nerve, optic neuritis, ischemic optic neuropathy (arteritic or non-arteritic), central retinal vein occlusion, or optic nerve infiltrative disorders (Behbehani, 2007)
  - Bilateral optic disk swelling (papilledema) with vision loss (Margolin, 2019)
  - Approved indications as noted above and being performed in high risk populations and will need anesthesia for the procedure and there is a suspicion of concurrent intracranial pathology (Lawson, 2000)

#### INDICATIONS FOR SELLA CT

MRI is contraindicated or cannot be performed (ACR NE, 2018; Chaudhary, 2011)

- For further evaluation of known sellar and parasellar masses (Donovan, 1996).
- Suspected or known pituitary gland disorder (Pineyro, 2017; Wu, 2014) based on:
  - Documented visual field defect suggesting compression of the optic chiasm; **OR**
  - Laboratory findings suggesting pituitary dysfunction (Freda, 2011); **OR**
  - Pituitary apoplexy with sudden onset of neurological and hormonal symptoms
  - Follow-up to other imaging suggesting sella (pituitary) mass

#### INDICATIONS FOR TEMPORAL/MASTOID/INTERNAL AUDITORY CANAL CT:

**Hearing loss (documented on audiogram)** (Cunnane, 2019; Sharma, 2018):

- Asymmetric Sensorineural when MRI is contraindicated (Krause, 2010; Verbist, 2012)
- Conductive or mixed (Trojanowsak, 2012)
- Congenital (Trojanowsak, 2012)
- Cochlear Implant evaluation (Juliano, 2015)

**Tinnitus** (Kessler, 2017; Pegge, 2017; Yew, 2014)

- Pulsatile tinnitus
- Unilateral non-pulsatile tinnitus and MRI is contraindicated or cannot be performed

### Ear Infection:

- Clinical Suspicion of acute mastoiditis as a complication of acute otitis media (Patel, 2014; Platzek, 2014, Kann, 2016; Luntz, 2012)
  - Systemic illness or toxic appearance
  - Signs of extracranial complications (e.g., i.e. postauricular swelling/erythema, auricular protrusion, retro-orbital pain, hearing loss, tinnitus, vertigo, nystagmus)
  - Not responding to treatment
- \* MRI is also indicated if there are signs of intracranial complications (e.g., i.e. meningeal signs, cranial nerve deficits, focal neurological findings, altered mental status)
- \* This is most common in the pediatric population
  - with some of the following signs or symptoms (Patel, 2014; Platzek, 2014)

#### Ear infection

- Postauricular swelling
  - Postauricular erythema
  - Protrusion of the auricle
  - Otagia
  - Fever
- **Chronic Otitis Media (with or without cholesteatoma on exam)** (Gomaa, 2013; Patel, 2014)
    - Failed treatment for acute otitis media

### Cholesteatoma (Barath, 2011)

### CSF Otorrhea (ACR, 2015 Hiremath, 2019)

### ~~Other~~ Vascular Indications (Bozek, 2016; Muderris, 2011)

- Suspected or known with need for further evaluation
  - Dehiscence of the jugular bulb or carotid canal OR
  - Other vascular anomalies of the temporal bone (i.e., aberrant internal carotid artery, high jugular bulb, persistent stapedia artery, aberrant petrosal sinus)

### Peripheral vertigo (Muncie, 2017; Strupp, 2013; Sharma, 2018, Swartz, 2005)

- Based on clinical exam (Head-Impulse with saccade, Spontaneous unidirectional horizontal nystagmus, Dix-Hallpike maneuver ~~unsteady gait~~); WITH AND
  - Persistent symptoms after a trial of medication and four weeks ~~of treatment: medication and~~ vestibular therapy (e.g., Epley's maneuvers) ~~if indicated~~
- ~~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.~~

Bell's Palsy/hemifacial spasm if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)

- If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset (Quesnel, 2010)

**Pre-operative/procedural evaluation:**

- Pre-operative evaluation for a planned surgery or procedure.

**Post- operative/procedural evaluation:**

- When imaging, physical, or laboratory findings indicate surgical or procedural complications.
- 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.

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~~When imaging, physical, or laboratory findings indicate surgical or procedural complications.~~

**BACKGROUND:**

Computed tomography's use of thin sections with multi-planar reconstruction (e.g., axial, coronal, and sagittal planes) along with its three-dimensional rendering permits thorough diagnosis and management of ocular and orbital disorders. Brain CT is often ordered along with CT of the orbit for head injury with orbital trauma. MRI Orbits is preferred over CT Orbits except in the case of orbital trauma, infection, or bone abnormalities

Temporal bone, mastoid, and internal auditory canal computed tomography (CT) is a unique study performed for problems such as conductive hearing loss, chronic otitis media, mastoiditis, cholesteatoma, congenital hearing loss and cochlear implants. It is a modality of choice because it provides 3D positional information and offers a high degree of anatomic detail. It is rarely used for evaluation of VIIth or VIIIth nerve tumors.

**POLICY HISTORY:**

**Review Date:** May 2019

**Review Summary:**

Orbit CT:

- Added clinical suspicion of osteomyelitis
- Removed orbital asymmetry; vision loss with etiology not identified on ophthalmologic; diplopia; suspected hyperthyroidism such as Graves' disease

Combination Brain CT/Orbit CT:

- Added bilateral papilledema w/vision loss if MRI is contraindicated

#### Sella CT:

- Added suspected or known pituitary gland disorder

#### Temporal/Mastoid/IAC CT:

- Expanded peripheral vertigo indication to include persistent symptoms after four weeks of treatment, medication, and vestibular therapy
- Removed: acoustic neuroma or peripheral cranial nerve palsy

**Review Date:** May 2020

#### **Review Summary:**

##### Clarified:

- Ophthalmoplegia with concern for orbital pathology
- Documented visual field defect if MRI is contraindicated or cannot be performed
- Orbital or ocular mass/tumor, suspected or known
- Clinical Suspicion of orbital infection
- Clinical Suspicion of Orbital Inflammatory Disease (eg, eye pain and restricted eye movement with suspected orbital pseudotumor)
- Brain CT/Orbit CT if MRI is contraindicated or cannot be performed
- Bilateral optic disk swelling (papilledema) with vision loss
- Reworded: Unilateral optic disk swelling/optic neuropathy of unclear etiology to distinguish between a compressive lesion of the optic nerve, optic neuritis, ischemic optic neuropathy (arteritic or non-arteritic), central retinal vein occlusion or optic nerve infiltrative disorders
- Under INDICATIONS FOR SELLA CT: clarified when MRI is contraindicated or cannot be performed
- Unilateral non-pulsatile tinnitus and MRI is contraindicated or cannot be performed
- Vascular Indications
- Suspected or known with need for further evaluation
- Dehiscence of the jugular bulb or carotid canal OR
- Other vascular anomalies of the temporal bone (i.e. aberrant internal carotid artery, high jugular bulb, persistent stapedia artery, aberrant petrosal sinus)
- Persistent symptoms after a trial of medication and four weeks of vestibular therapy (eg, Epley's maneuvers)

##### Added:

- CT is preferred for visualizing bony detail and calcifications, MRI is superior for the evaluation of the visual pathways, globe and soft tissues
- Unilateral optic disk swelling if MRI is contraindicated or cannot be performed
- Under Orbital trauma
  - For further evaluation of a fracture seen on X-ray for treatment or surgical planning
- Congenital orbital anomalies

- Under indications for Sella CT:
  - Pituitary apoplexy with sudden onset of neurological and hormonal symptoms
- Clinical Suspicion of acute mastoiditis as a complication of acute otitis
  - Systemic illness or toxic appearance
  - Signs of extracranial complications (e.g., postauricular swelling/erythema, auricular protrusion, retro-orbital pain, hearing loss, tinnitus, vertigo, nystagmus)
  - Not responding to treatment
- \* MRI is also indicated if there are signs of intracranial complications (e.g., meningeal signs, cranial nerve deficits, focal neurological findings, altered mental status)
- \* This is most common in the pediatric population
- Cholesteatoma
- CSF Otorrhea
- Bell's Palsy/hemifacial spasm if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)
  - If atypical signs, slow resolution beyond three weeks, no improvement at four months, or facial twitching/spasms prior to onset

Deleted:

- Unilateral papilledema, approve dedicated Orbits CT even if Brain CT approved
- "Or known" from Suspected or known pituitary gland disorder
- Clinical Suspicion of acute mastoiditis with some of the following signs or symptoms
  - Ear infection
  - Postauricular swelling
  - Postauricular erythema
  - Protrusion of the auricle
  - Otalgia

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