

AmeriHealth Caritas Louisiana

National Imaging Associates, Inc.*	
<u>Sinus Face Orbit MRI</u>	Original Date: November 2007
CPT Codes: 70540, 70542, 70543	Last Revised Date: May 2020
Guideline Number: NIA(CG)_014	Implementation Date: <u>January 2021</u>TBD

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.

A single authorization for CPT code 70540, 70542, or 70543 includes imaging of the Orbit, Face, Sinuses, and Neck. Multiple authorizations are not required.

INDICATIONS FOR ORBIT MRI:

MRI is superior for the evaluation of the visual pathways, globe and soft tissues, CT is preferred for visualizing bony detail and calcifications ([Hande, 2012](#); Kennedy, 2018; [Hande, 2012](#))

- **Abnormal external or direct eye exam**
 - Exophthalmos (proptosis) or enophthalmos ([Aiyekomogben, 2016](#))
 - Ophthalmoplegia with concern for orbital pathology
 - Unilateral optic disk swelling ~~papilledema approve dedicated Orbit CT MRI even if Brain CT MRI approved~~ ([Hata, 2017](#); [Margolin, 2019](#); [Passi, 2013](#))
 - Documented visual field defect ([Fadzil, 2013](#); [Sadun, 2011](#); [Kedar, 2011](#); [Prasad, 2012](#); [Sadun, 2011](#); [Fadzil, 2013](#))
 - Unilateral or with optic disc abnormality; **AND**
 - Not explained by underlying diagnosis, glaucoma, or macular degeneration
 - Optic Neuritis ([Gala, 2015](#); [Srikajon, 2018](#); [Voss, 2011](#))
 - If atypical presentation, severe visual impairment, or poor recovery following initial onset or treatment onset ([CMSC, 2018](#))
- **Orbital trauma** ([Lin, 2012](#); [Sung, 2014](#))
 - Physical findings of direct eye injury

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- Suspected orbital trauma with indeterminate x-ray or ultrasound
- Orbital or Ocular mass/tumor, suspected or known (Hande, 2012; Kedar, 2011)
- Clinical Suspicion of orbital infection (Hande, 2012; Kennedy, 2018; Hande, 2012)
- Clinical Suspicion of osteomyelitis (Arunkumar, 2011; Lee, 2016; Arunkumar, 2011)
 - 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)
- Clinical Suspicion of osteomyelitis (Lee, 2016; Arunkumar, 2011)
 - Direct visualization of bony deformity
 - Abnormal x-rays
- Congenital orbital anomalies

INDICATIONS FOR FACE/SINUS MRI:

- Rhinosinusitis with suspected orbital or intracranial complications (Kirsch, 2017)
 - Sinonasal obstruction. Suspected mass (Kirsch, 2017; Rosenfeld, 2015)
 - Clinical Suspicion of fungal infection (Gavito-Higuera, 2016)
 - Clinical Suspicion of orbital or intracranial complications complications such as (Arunkumar, 2011; Lee, 2016; Arunkumar, 2011)
 - Preseptal, orbital, or central nervous system infection
 - Osteomyelitis
 - Cavernous sinus thrombosis
- Sinonasal obstruction, suspected-mass (Kirsch, 2017; Rosenfeld, 2015)
- Suspected infection
 - Osteomyelitis (after ~~x-ray~~x-rays) (Pincus, 2009)
 - Abscess
- Anosmia on objective testing that is persistent and of unknown origin (Policeni, 2017; Zaghouani 2013; Rouby, 2011; Zaghouani, 2013)
- Granulomatosis with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015)
- Face mass (Kirsch, 2017; Koeller, 2016):

- Present on physical exam and remains non-diagnostic after x-ray or ultrasound is completed (Kuno, 2014)
- **Known or highly suspected head and neck cancer on examination (Kirsch, 2017)**
- **Increased risk for malignancy (Kirsch, 2017) with one or more of the following findings (Pynnonen, 2017):**
 - Fixation to adjacent tissues
 - Firm consistency
 - Size > 1.5 cm
 - Ulceration of overlying skin
 - Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause
- **Clinical concern for abscess**
- Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).
- **Prior history of tumor with suspicion of recurrence**
- **Facial trauma (Echo, 2010; Lin, 2012; Raju, 2017; Sung, 2014; Raju, 2017; Echo, 2010)**
 - Physical findings of direct facial bone injury
 - **Suspected orbital trauma with indeterminate x-ray or ultrasound**
 - Post traumatic CSF rhinorrhea (for CSF otorrhea should be a Temporal Bone imaging is recommended) (Oh, 2017; Snetty, 2015)
- **Trigeminal neuralgia/neuropathy if MRI is contraindicated or cannot be performed (for evaluation of the extracranial nerve course)**
 - If < 40 years of age or atypical features (e.g., ie bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain > 2min, pain outside trigeminal nerve distribution, progression) (Policeni, 2017; Hughes, 2016; ACR, 2017; Hughes, 2016; Policeni, 2017)

INDICATIONS FOR NECK- MRIMRI:

Suspected tumor or cancer (not parotid region or thyroid) (ACR, 2018a):

- **Palpable suspicious lesions in mouth or throat (Kuno, 2014).**
- **Suspicious mass/tumor found on another imaging study and needing clarification**

● **Vocal cord lesions or vocal cord paralysis (Dankbaar, 2014).**
MR Sialography (Ren, 2015)

Salivary gland stones or clinical concern for abscess (Burke, 2011)
MR Sialography (Ren, 2015)

Brachial plexus dysfunction associated with suspected neck mass (Brachial plexopathy/Thoracic Outlet Syndrome) (Ferrante, 2012; Tharin, 2014)
Palpable suspicious lesions in mouth or throat (Kuno, 2014).

~~Primary hyperparathyroidism with nondiagnostic ultrasound or nuclear medicine scan and surgery is planned (Khan, 2014; Piciucchi, 2012).~~

~~Palpable suspicious lesions in mouth or throat (Kuno, 2014).~~

- ~~Non thyroid n~~Neck mass (non-parotid or thyroid):

- Present on physical exam and remains non-diagnostic after ~~x-ray or~~ ultrasound is completed (Kuno, 2014)
~~*Note: For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy~~
 - Unless ~~i~~Increased risk for malignancy ~~based on (Pynnonen, 2017) with one or more of the following findings (Pynnonen, 2017):~~
 - Any of these:
 - Fixation to adjacent tissues
 - Firm consistency
 - Size >1.5 cm
 - Ulceration of overlying skin
 - Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause
 - History of cancer
 - ~~Clinical concern for abscess~~
 - Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).

- Neck Mass (parotid) (ACR-~~Neck Mass~~, 2018a)

- Parotid mass found on other imaging study and needing further evaluation (US is the initial imaging study of a parotid region mass)

- Neck ~~MN~~ass (thyroid) - US is the initial imaging study of a ~~parotid~~thyroid region mass. CT is preferred to MRI in the evaluation of thyroid masses since there is less respiratory motion artifact (ACR-~~Thyroid~~, 2018b)

- Staging and monitoring for recurrence of known thyroid cancer (ACR-~~Thyroid~~, 2018b).
 - To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression*
(Gharib 2016; Lin, 2016; Gharib 2016)

*NOTE: Chest CT may be included for preoperative assessment in some cases

*P * In pediatric patients (≤ 18 years old) (Wai, 2020): an ultrasound should be completed as initial imaging.

- Neck masses in the pediatric population if ultrasound is inconclusive or suspicious (Brown, 2016)
- History of malignancy

Neck masses are a common presenting complaint in the pediatric population with malignant causes less likely than in adults (Brown, 2016)

Known or suspected deep space infections or abscesses of the pharynx or neck (Meyer, 2009)

Other indications for a Neck MRI:

- MR Sialography to evaluate ~~salivary gland stones~~ ducts or clinical concern for abscess (Burke, 2011; Ren, 2015)
MR Sialography (Ren, 2015)
- Vocal cord lesions or vocal cord paralysis (Dankbaar, 2014).
- Diagnosed ~~primary~~ hyperparathyroidism when surgery is planned
 - with ~~Previous~~ nondiagnostic ultrasound or nuclear medicine scan and surgery is planned (Khan, 2014; Piciucchi, 2012).
- Brachial plexus dysfunction associated with suspected neck mass or injury (Brachial plexopathy/Thoracic Outlet Syndrome) (Ferrante, 2012; Tharin, 2014)
- Bell's palsy/hemifacial spasm (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)
- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (ACR, 2017; Mumtaz, 2014; Policeni, 2017), (ACR-CN 2017))

OTHER INDICATIONS FOR ORBIT/FACE/SINUS/NECK MRI

~~Known tumor or cancer of skull base, orbits, sinuses, tongue, larynx, nasopharynx, pharynx, or salivary glands~~

- ~~Initial staging (Kuno, 2013)~~
- ~~Restaging during treatment~~
- ~~Suspected recurrence or new metastases based on symptoms or examination findings~~
 - ~~New mass~~
~~Change in lymph nodes (Hoang, 2013)~~
- ~~Anosmia on objective testing (Policeni, 2017, Zaghrouani 2013, Rouby 2011)~~
~~Trigeminal neuralgia if < 40 years of age or atypical features (ie bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain > 2min, pain outside trigeminal nerve distribution, progression) (Policeni, 2017; Hughes, 2016)~~
- ~~Objective Cranial Nerve Palsy (Mumtaz, 2014; Policeni, 2017)~~
~~Granulomatosis with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015)~~

OTHER INDICATIONS FOR ORBIT/FACE/SINUS/NECK MRI

~~Known tumor or cancer of skull base, orbits, sinuses, face, tongue, larynx, nasopharynx, pharynx, or salivary glands~~

- ~~Initial staging (Kuno, 2013)~~
- ~~Restaging during treatment~~
- ~~Suspected recurrence or new metastases based on symptoms or examination findings~~
 - ~~New mass~~
 - ~~Change in lymph nodes (Hoang, 2013)~~

- Active monitoring Surveillance for recurrence appropriate for tumor type and stage

Indication for combination studies for the initial pre-therapy staging of cancer, OR active monitoring for recurrence as clinically indicated OR evaluation of suspected metastases:

- < 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine.

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.

INDICATIONS FOR COMBINATION STUDIES: ORBIT/FACE/ SINUS/NECK MRI WITH BRAIN MRI.

- 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).

Brain and Orbit MRI

- ~~Anosmia on objective testing (Policeni, 2017; Zaghouani, 2013)~~
- ~~Trigeminal neuralgia (Policeni, 2017; Hughes, 2016)~~
- ~~Cranial neuropathy (weakness or sensory abnormalities of the head and neck) (Policeni, 2017)~~
- ~~Unilateral papilledema: to distinguish a compressive lesion on the optic nerve or optic disc swelling associated with acute demyelinating optic neuritis in multiple sclerosis from nonarteritic anterior ischemic optic neuropathy (NAION), central retinal vein occlusion or optic nerve infiltrative disorders. 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)~~
- ~~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).~~
- Bilateral optic disk swelling (papilledema) papilledema with vision loss (Margolin, 2019)
- Optic Neuritis if atypical presentation, severe visual impairment, or poor recovery following initial onset or treatment onset (CMSC, 2018)
- Known or suspected neuromyelitis optica spectrum disorder with severe, recurrent, or bilateral optic neuritis (Wingerchuk, 2015)

Brain and Sinus MRI

- Anosmia on objective testing that is persistent and of unknown origin (ACR, 2017; Policeni, 2017; Zaghouani, 2013, ACR-CN, 2017) (Brain, Face combination)
- Granulomatosis with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015)

— Brain and Neck MRI Trigeminal neuralgia that meets above criteria MRI (Policeni, 2017, Hughes 2016, ACR-CN, 2017) (Brain, Brain MRA, Orbit, Face, IAC, Neck combination)

Bells/hemifacial spasm that meet above criteria (Brain, IAC, Face, Neck combo)

- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (ACR, 2017; Mumtaz, 2014; Policeni, 2017, ACR-CN 2017) (Brain, Neck Combo)

— Granulomatosis with polyangiitis (Wegener's granulomatosis) disease (Pakalniskis, 2015) (Brain, Orbit, Sinus, Face, Neck combination)

— Trigeminal neuralgia (Policeni, 2017; Hughes, 2016)

— Cranial neuropathy (weakness or sensory abnormalities of the head and neck) (Policeni, 2017)

- 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).

INDICATIONS FOR COMBINATION STUDIES: Initial pre therapy staging of cancer, OR active monitoring for recurrence as clinically indicated OR evaluation of suspected metastases:

- ≤ 5 concurrent studies to include CT or MRI of any of the following areas as appropriate depending on the cancer: Neck, Abdomen, Pelvis, Chest, Brain, Cervical Spine, Thoracic Spine or Lumbar Spine.

BACKGROUND:

Magnetic resonance imaging (MRI) is used in the evaluation of face and neck region masses, trauma, and infection. The soft-tissue contrast between normal and abnormal tissues provided by MRI is sensitive for differentiating between inflammatory disease and malignant tumors and permits the precise delineation of tumor margins. MRI is used for therapy planning and follow-up of face and neck neoplasms. It is also used for the evaluation of neck lymphadenopathy and vocal cord lesions.

CT scanning remains the study of choice for the imaging evaluation of acute and chronic inflammatory diseases of the sinonasal cavities. MRI is not considered the first-line study for

routine sinus imaging because of limitations in the definition of the bony anatomy and length of imaging time. MRI for confirmation of diagnosis of sinusitis is discouraged because of hypersensitivity (overdiagnosis) in comparison to CT without contrast. MRI, however, is superior to CT in differentiating inflammatory conditions from neoplastic processes. MRI may better depict intraorbital and intracranial complications in cases of aggressive sinus infection, as well as differentiating soft-tissue masses from inflammatory mucosal disease. MRI may also identify fungal invasive sinusitis or encephaloceles.

Anosmia - Nonstructural causes of anosmia include post viral symptoms, medications (Amitriptyline, Enalapril, Nifedipine, Propranolol, Penicillamine, Sumatriptan, Cisplatin, Triflouperazine, Propylthiouracil). These should be considered prior to advanced imaging to look for a structural cause.

POLICY HISTORY:

Review Date: July 2019

Review Summary:

ORBIT MRI:

- Removed: Orbital asymmetry and Suspected hyperthyroidism (such as Graves' disease)
- Added: Clinical suspicion of osteomyelitis

Face/Sinus MRI

- Added specifics to Face Mass:
 - Present on physical exam and remains non-diagnostic after x-ray or ultrasound is completed (Kuno, 2014)
 - Clinical concern for abscess
 - Failed 2 weeks of treatment for suspected infectious adenopathy (Haynes, 2015).
 - Prior history of tumor with suspicion of recurrence
- Added: Facial trauma with physical findings of direct facial bone injury; suspected orbital trauma w/indeterminate x-ray or US; CSF leak (rhinorrhea or otorrhea)

Other Indications

- Added: Suspected recurrence or new metastases based on symptoms or examination findings with new mass or change in lymph nodes; Anosmia on objective testing; Trigeminal neuralgia if <40 years of age or atypical features; Objective cranial nerve palsy; and Granulomatosis with polyangiitis (Wegener's granulomatosis) disease

Indications for combo studies orbit/face/sinus neck MRI with brain MRI

- Added: Bilateral papilledema with vision loss AND Known or suspected neuromyelitis optica spectrum disorder with severe, recurrent, or bilateral optic neuritis

Review Date: May 2020

Review Summary:

Clarified:

Orbit

- 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 (e.g., eye pain and restricted eye movement with suspected orbital pseudotumor)

Face/Sinus

- Suspected infection
 - Osteomyelitis (after x-rays)
 - Abscess
- Facial Trauma
 - Post traumatic CSF rhinorrhea (for CSF otorrhea Temporal Bone imaging is recommended)
- Anosmia on objective testing that is persistent and of unknown origin (also in Brain and Sinus combo section)

Neck

- Neck mass (non-parotid or thyroid)
 - Note: For discrete cystic lesions of the neck, an ultrasound should be performed as initial imaging unless there is a high suspicion of malignancy
- MR Sialography to evaluate salivary ducts
- Objective cranial nerve palsy (CN IX-XII) (for evaluation of the extracranial nerve course) (also in Brain and Neck combo section)

Combo - Brain and Orbit

- 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
- Bilateral optic disk swelling (papilledema) with vision loss

Added:

Orbit

- MRI is superior for the evaluation of the visual pathways, globe and soft tissues, CT is preferred for visualizing bony detail and calcifications
- Unilateral optic disk swelling
- Under documented visual field defect
 - Unilateral or with optic disc abnormality
- Congenital orbital anomalies

Added:

Face/Sinus

- Examples of orbital or intracranial complications
 - Preseptal, orbital, or central nervous system infection
 - Osteomyelitis
 - Cavernous sinus thrombosis

- Face mass
 - Known or highly suspected head and neck cancer on examination
- Trigeminal neuralgia/neuropathy (for evaluation of the extracranial nerve course)
 - If < 40 years of age or atypical features (e.g. bilateral, hearing loss, dizziness/vertigo, visual changes, sensory loss, numbness, pain > 2min, pain outside trigeminal nerve distribution, progression)

Added:

Neck

- Suspicious mass/tumor found on another imaging study and needing clarification
- Under increased risk for malignancy
 - History of cancer
 - Mass present ≥ two weeks (or uncertain duration) without significant fluctuation and not considered of infectious cause
- Neck Mass (parotid)
 - Parotid mass found on other imaging study and needing further evaluation

Added:

Neck

- Neck Mass (thyroid) - US is the initial imaging study of a thyroid region mass. CT is preferred over MRI in the evaluation of thyroid masses since there is less respiratory motion artifact
 - Staging and monitoring for recurrence of known thyroid cancer
 - To assess extent of thyroid tissue when other imaging suggests extension through the thoracic inlet into the mediastinum or concern for airway compression (Lin, 2016; Gharib 2016)

NOTE: Chest CT may be included for preoperative assessment in some cases
- Pediatric patients (≤18 years old)
 - Neck masses in the pediatric population if ultrasound is inconclusive or suspicious
 - History of malignancy

Added:

Neck

- Known or suspected deep space infections or abscesses of the pharynx or neck
- Known tumor or cancer of skull base, orbits, sinuses, face, tongue, larynx, nasopharynx, pharynx, or salivary glands
 - Surveillance appropriate for tumor type and stage
- 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

Added:

Combo

- Added sub Combo sections
 - Brain and Orbit

- **Optic Neuritis if atypical presentation, severe visual impairment or poor recovery following initial onset or treatment onset**

- **Brain and Sinus**
- **Brain and Neck**

Deleted:

Orbit

- **Unilateral optic disk swelling papilledema approve dedicated Orbit MRI even if Brain MRI approved**

Deleted:

Face/Sinus

- **Clinical Suspicion of osteomyelitis**
 - **Direct visualization of lesion over bone**
 - **Abnormal x-ray**
- **Face Mass**
 - **Prior history of tumor with suspicion of recurrence**
- **Facial trauma**
 - **Suspected orbital trauma with indeterminate x-ray or ultrasound**

Neck

- **Palpable from Palpable suspicious lesions in mouth or throat**
- **Salivary gland stones or clinical concern for abscess**
- **Thoracic Outlet Syndrome**

Combo

- **Trigeminal neuralgia**
- **Cranial neuropathy (weakness or sensory abnormalities of the head and neck)**

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