



CLINICAL GUIDELINES

Neck Imaging Policy

Version 1.0

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eviCore healthcare Clinical Decision Support Tool Diagnostic Strategies: This tool addresses common symptoms and symptom complexes. Imaging requests for individuals with atypical symptoms or clinical presentations that are not specifically addressed will require physician review. Consultation with the referring physician, specialist and/or individual's Primary Care Physician (PCP) may provide additional insight.

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Abbreviations for Neck Imaging Guidelines

ALS	amyotrophic lateral sclerosis
CT	computed tomography
ENT	Ear, Nose, Throat
FNA	fine needle aspiration
GERD	gastroesophageal reflux disease
GI	gastrointestinal
HIV	human immunodeficiency virus
MRI	magnetic resonance imaging

Neck-1: General

- A current clinical evaluation (within 60 days), which includes a relevant history and physical examination and appropriate laboratory studies and non-advanced imaging modalities, such as plain x-ray or ultrasound, are required prior to considering advanced imaging. Other meaningful contact (telephone call, electronic mail or messaging) by an established patient can substitute for a face-to-face clinical evaluation
- Advanced imaging of the neck covers the following areas:
 - ◆ Skull base (thus a separate CPT® code for head imaging in order to visualize the skull base is not necessary).
 - ◆ Nasopharynx
 - ◆ Upper oral cavity to the head of the clavicle
 - ◆ Parotid glands and the supraclavicular region
- Ultrasound of the soft tissues of the neck including thyroid, parathyroid, parotid and other salivary glands, lymph nodes, cysts, etc. is coded as CPT® 76536. This can be helpful in more ill-defined masses or fullness and differentiating adenopathy from mass or cyst, to define further advanced imaging.
- CT Neck
 - ◆ CT Neck is usually obtained with contrast only (CPT® 70491).
 - Little significant information is added by performing a CT Neck without and with contrast (CPT® 70492), and there is the risk of added radiation exposure, especially to the thyroid.
 - CT Neck without contrast (CPT® 70490) can be difficult to interpret due to difficulty identifying the blood vessels
 - Exception: Contrast is not generally used when evaluating the trachea with CT. Evaluate salivary duct stones in the appropriate clinical circumstance where intravenous contrast may obscure high attenuation stones
 - Contrast enhanced CT is helpful in the assessment of cervical adenopathy and preoperative planning in the setting of thyroid carcinomas
 - Contrast is recommended as an adjunct to US for patients with clinical suspicion for advanced disease, including invasive primary tumor, or clinically apparent multiple or bulky lymph node involvement
 - Contrast may cause intense and prolonged enhancement of the thyroid gland which interferes with radioactive iodine nuclear medicine studies.
 - Use of IV contrast is an important adjunct because it helps to delineate the anatomic relationship between the primary tumor and metastatic disease. Iodine is generally cleared within four to eight weeks in most patients, so concern about iodine burden from IV contrast causing a clinically significant delay in subsequent whole-body scans (WBSs) or radioactive iodine (RAI) treatment after the imaging followed by surgery is generally unfounded. The benefit gained from improved anatomic imaging generally outweighs any potential risk of a several week delay in RAI imaging or

therapy. Where there is concern, a urinary iodine to creatinine ratio can be measured.

➤ MRI Neck

- ◆ MRI Neck is used less frequently than CT Neck.
- ◆ MRI Neck without and with contrast (CPT® 70543) is appropriate if CT suggests the need for further imaging or if ultrasound or CT suggests any of the following:
 - Neurogenic tumor (schwannoma, neurofibroma, glomus tumor, etc.)
 - Vascular malformations
 - Deep neck masses
 - Angiofibromas

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Neck-2: Cerebrovascular and Carotid Disease

- See these related topics in the Head Imaging Guidelines:
 - ◆ **HD-1.5: General Guidelines – CT and MR Angiography (CTA and MRA)**
 - ◆ **HD-12: Aneurysm and AVM**
 - ◆ **HD-21: Stroke/TIA**
 - ◆ **HD-22: Cerebral Vasculitis**
 - ◆ **HD-23: Dizziness, Vertigo and Syncope**
 - ◆ **HD-27: Hearing Loss and Tinnitus**
 - ◆ **HD-32: Eye Disorders and Visual Loss**
- See **PVD-3: Cerebrovascular and Carotid Disease** in Peripheral Vascular Disease Imaging Guidelines.

Neck-3: Dysphagia and Esophageal Disorders

Neck-3.1: Dysphagia and Esophageal Disorders

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Neck-3.1: Dysphagia and Esophageal Disorders

- Gastroesophageal Reflux Disease (GERD)⁵
 - ◆ Advanced imaging is generally not indicated for the evaluation of GERD, the diagnosis of which is usually made on the basis of clinical history, in conjunction with endoscopy, pH monitoring, and occasionally manometry. Exceptions would include the following:
 - Non-cardiac chest pain suspected of being GERD should be evaluated first to exclude cardiac and other etiologies. See **CH-4.1: Non-Cardiac Chest Pain-Imaging** in the Chest Imaging Guidelines.
 - Gastric emptying study (CPT® 78264) can be approved for patients with refractory GERD symptoms, and gastroparesis is being considered..
- Suspected foreign body impaction and ingested foreign bodies:¹⁻³
 - ◆ Initial imaging is performed with appropriate plain films.
 - ◆ If imaging is negative, or there is suspicion of a radiolucent foreign body (such as fish or chicken bones, wood, plastic, thin metal objects, aluminum can pop-ups, etc.):
 - CT Neck and/or Chest with or without contrast
 - 3-D reconstruction (CPT® 76377 or CPT® 76376) can be approved in this setting
 - ◆ The use of oral contrast is discouraged for acute dysphagia or foreign body impaction, as the contrast may not pass, may be aspirated, and can interfere with subsequent endoscopic intervention.
- Oropharyngeal or esophageal dysphagia^{4,6,12,13}
 - ◆ Oropharyngeal (difficulty in transferring food from the mouth to the pharynx)
 - Suspected neurologic causes: See appropriate sections in **Head Imaging Guidelines**
 - Video fluoroscopic swallowing study
 - ◆ Esophageal dysphagia (difficulty in transferring food down the esophagus in the retrosternal region, e.g. food sticking in the chest)
 - Initial barium esophagram or upper gastrointestinal endoscopy
 - Esophageal manometry if indicated
 - Structural lesions identified on esophagram or endoscopy requiring further evaluation (e.g. tumors, extrinsic compression):
 - CT Neck (CPT® 70491), CT Chest (CPT® 71260) and/or CT Abdomen (CPT® 74160) depending on the level of the lesion.
- Suspected perforation, abscess, or fistula
 - ◆ CT Neck, Chest, and/or Abdomen, preferably with contrast, as requested, depending on location
- Evaluation of structural abnormalities demonstrated on barium esophagram or endoscopy (e.g., external compression, tumor, stricture, diverticulum, etc.)
 - ◆ CT Chest (CPT® 71260), CT Neck (CPT® 70491), and/or CT Abdomen (CPT® 74160) depending on location

- Hiatal hernia
 - ◆ See **AB-12.3: Hiatal Hernia** in the Abdomen Imaging Guidelines
- Globus Sensation⁷⁻⁹
 - ◆ Globus sensation is a feeling of a lump or foreign body in the throat. In general, laryngoscopy, endoscopy, and physical examination will rule out malignant causes and advanced imaging is usually not needed for evaluation.
 - If alarm symptoms are present (dysphagia, weight loss, odynophagia, throat pain, hoarseness, and lateralization of symptoms)
 - Laryngoscopy and upper endoscopy should be performed prior to advanced imaging.
 - CT Neck with contrast (CPT® 70491) for ANY of the following:
 - Negative or equivocal findings on laryngoscopy and upper endoscopy
 - Known history of upper aerodigestive or esophageal malignancy
 - Known history of lymphoma
 - History of previous neck, esophageal, or gastric surgery
 - Palpable abnormality on physical examination
- Suspected Vascular Ring^{10,11,14,15}
 - ◆ CTA Chest with contrast (CPT® 71275) can be used in the evaluation of suspected vascular ring
 - ◆ MRI Chest without contrast, or MRI Chest without and with contrast (CPT® 71550 or CPT® 71552), can be performed if vascular ring is suspected

Practice Notes

- A detailed history of the dysphagia symptoms is important to distinguish neurogenic, pharyngeal and esophageal disorders
- Dysphagia (difficulty swallowing) can be caused by a wide range of benign and malignant causes that affects the body's ability to move food or liquid from the mouth to the pharynx and into the esophagus.
- A short duration (weeks to months) of rapidly progressive esophageal dysphagia with associated weight loss is highly suggestive of esophageal cancer.
- Advanced imaging for patients presenting with isolated globus rarely impacts clinical management. In a study of 148 neck CTs and 104 barium esophagrams done for the evaluation of globus sensation, there were no malignancies detected.

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Neck-4: Cervical Lymphadenopathy

Neck-4.1: Imaging

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Neck-4.1: Imaging

See: **Neck-5.1: Neck Masses – Imaging**

Neck-5: Neck Masses

Neck-5.1: Neck Masses – Imaging

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Neck-5.1: Neck Masses – Imaging

- Cervical lymphadenitis is common and follows most viral or bacterial infections of the ears, nose and throat. Painful acute lymphadenopathy should be treated with a trial of conservative therapy for 2 weeks, including antibiotics if appropriate. If there is improvement with conservative treatment, advanced imaging is not indicated but if the adenopathy persists it may be imaged as per below.^{1,2,4}
- Ultrasound (CPT® 76536) can be considered for ANY of the following:^{1,2,4}
 - ◆ Anterior neck masses²
 - ◆ Cervical adenopathy/lymphadenitis or an inflammatory, infective, or reactive mass that has failed a 2 week trial of treatment or observation (including antibiotics if appropriate)^{1,2}
 - ◆ Any ill-defined mass, fullness or asymmetry²
 - ◆ High suspicion of malignancy^{2,4}
- CT Neck with contrast (CPT® 70491) can be considered if:^{2,4}
 - ◆ Neck mass with high suspicion for malignancy with any ONE of the following:
 - Non-tender neck masses⁴
 - Size $\geq 1.5\text{cm}^4$
 - Firm texture or fixation of the mass⁴
 - Absence of infectious etiology⁴
 - 2 or more weeks duration⁴
 - Cervical adenopathy/lymphadenitis or an inflammatory, infective, or reactive mass that has failed a 2 week trial of treatment or observation (including antibiotics if appropriate)^{2,4}
 - Ear pain ipsilateral to the neck mass⁴
 - Associated onset of persistent hoarseness, tonsil asymmetry, oral or oropharyngeal ulceration, or ulceration of skin overlying the neck mass⁴
 - History of malignancy that would be primary or metastatic to the neck⁴
 - Prior ultrasound results are suspicious or indeterminate for malignancy²
 - ◆ Carcinoma found in a lymph node or other neck mass²
 - ◆ Suspected peritonsillar, retropharyngeal or other deep neck space abscess²
 - ◆ Suspected sarcoidosis⁵
 - ◆ Preoperative evaluation of any neck mass²
- MRI Neck without and with contrast (CPT® 70543) is supported if:²
 - ◆ CT suggests the need for further imaging²
 - ◆ Ultrasound or CT suggests neurogenic tumor (schwannoma, neurofibroma, glomus tumor, etc.), vascular malformations, deep neck masses, or angiofibroma.²

Practice Notes

- Painful acute lymphadenopathy associated with uncomplicated pharyngitis, URI or tonsillitis should undergo conservative therapy for two weeks including antibiotics, if appropriate. If there is improvement with conservative treatment, advanced imaging is not indicated if:^{3,4,5}
 - ◆ Inflammatory neck adenopathy is often associated with URI, pharyngitis, dental infection, HIV and toxoplasmosis. Occasionally it is associated with sarcoidosis and tuberculosis.
- Malignancy is a greater possibility in adults that are heavy drinkers and smokers, but HPV associated disease is on the rise and there can be a high suspicion for malignancy even without these traditional risk factors.
- ENT evaluation can be helpful in determining the need for advanced imaging.
- Although CT and MRI can have characteristic appearances for certain entities, biopsy and histological diagnosis are the only way to obtain a definitive diagnosis. The preferred initial method of biopsy is FNA or Ultrasound guided FNA of the mass.⁵
- The most common causes of neoplastic cervical adenopathy are metastasis from head and neck tumors or lymphoma.

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Neck-6: Malignancies Involving the Neck

- See the following in the Oncology Imaging Guidelines:
 - ◆ **ONC-3: Squamous Cell Carcinomas of the Head and Neck**
 - ◆ **ONC-4: Salivary Gland Cancers**
 - ◆ **ONC-6: Thyroid Cancer**
 - ◆ **ONC-9: Esophageal Cancer**
 - ◆ **ONC-27: Non-Hodgkin Lymphomas**
 - ◆ **ONC-28: Hodgkin Lymphoma**

Neck-7: Recurrent Laryngeal Palsy

- See [HD-7: Recurrent Laryngeal Palsy](#) in the Head Imaging Guidelines

Neck-8: Thyroid and Parathyroid

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Neck-8.1: Thyroid Nodule

- Serum thyrotropin (TSH) should be measured in the initial evaluation of thyroid nodule/mass/asymmetry/goiter.
- Nuclear scan (CPT® 78013 or CPT® 78014) should be performed as the initial imaging study if the serum TSH is subnormal and ANY of the following:
 - ◆ Single or multiple thyroid nodules^{3,6}
 - ◆ Suspicion of ectopic thyroid tissue³
 - ◆ Presence of thyroid nodule in the setting of Grave's disease (to rule out cold nodule).³
 - ◆ Non-diagnostic or indeterminate FNA of thyroid nodule, (e.g. follicular lesion of undetermined significance) to see if hot (functioning) nodule that may be benign vs cold nodule.
- Ultrasound (US) Neck (CPT® 76536) is the appropriate initial study for evaluation of suspected thyroid abnormalities, including goiter and thyroid mass(es) in the following clinical scenarios^{2,3,6} (See **Neck-5.1: Neck Masses – Imaging** regarding nonthyroidal anterior neck masses):
 - ◆ Normal or High serum thyrotropin (TSH)^{1,3,6}
 - ◆ Thyroid nodule(s) being monitored with imaging: US is the indicated imaging modality rather than CT or MRI
 - ◆ Nodules ≤1 cm with very low suspicion US pattern including spongiform pattern and pure cysts do not require repeat US.⁶
 - ◆ For more suspicious or larger nodules, if Fine Needle Aspiration (FNA) is not performed or was not diagnostic for malignancy, US can be repeated:
 - If US features are highly suspicious: repeat US every 6 months for up to 24 months.
 - If US features are of low to intermediate suspicion: repeat US at 12 and 24 months.
 - If nodule is stable after 24 months, follow-up ultrasound exams (CPT® 76536) can be performed every 3 to 5 years for interval surveillance.¹²
- Fine-Needle Aspiration (FNA) is indicated for suspicious and/or large thyroid nodules prior to CT or MRI imaging⁶

Sonographic Pattern	US features	Estimated risk % of Malignancy	FNA size cutoff (largest dimension)
High Suspicion	Solid hypoechoic nodule or solid hypoechoic component of a partially cystic nodule with one or more of the following features: Irregular margins (infiltrative, microlobulated), microcalcifications, taller than wide shape, rim calcifications with small extrusive soft tissue component, evidence of ETE	>70-90	Recommend FNA at ≥1cm
Intermediate Suspicion	Hypoechoic solid nodule with smooth margins without microcalcifications, ETE, or taller than wide shape	10-20	Recommend FNA at ≥1cm
Low Suspicion	Isoechoic or hypoechoic solid nodule, or partially cystic nodule with eccentric solid areas, without microcalcifications, irregular margin or ETE, or taller than wide shape	5-10	Recommend FNA at ≥1.5cm
Very Low Suspicion	Spongiform or partially cystic nodule without any of the sonographic features described in low, intermediate, or high suspicion patterns	<3	Consider FNA at ≥2cm Observation without FNA is also a reasonable option
Benign	Purely cystic nodules (no solid component)	<1	No biopsy

(Source: 2015 American Thyroid Management Guideline for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer)

- CT Neck with contrast (CPT® 70491) or CT Neck without contrast (CPT® 70490), or MRI Neck without and with contrast (CPT® 70543). MRI and CT **are not** indicated for routine thyroid nodule evaluation and should only be considered for:
 - ◆ Evaluation of extent of known substernal goiter³
 - ◆ Airway compression³
 - ◆ Presence of pathologic lymph nodes in cervical regions not visualized on ultrasound³
 - ◆ Clinically suspected advanced disease confirmed by FNA, including invasive primary tumor^{3,6}
 - ◆ Preoperative planning for any thyroid disease
- A thyroid nodule detected for the first time during pregnancy should be managed in the same way as in non-pregnant patients, except for avoiding the use of radioactive agents for diagnostic and therapeutic purposes³

Practice Notes

- The basis of thyroid nodule management is the use of ultrasonography (US), thyrotropin (TSH, formerly thyroid-stimulating hormone) assay, and FNA biopsy, together with clinical findings.
- Patient Features Suggesting Increased Risk for Thyroid Malignancy.
 - ◆ History of head and neck irradiation
 - ◆ Family history of medullary thyroid carcinoma, multiple endocrine neoplasia type 2, or papillary thyroid carcinoma
 - ◆ Age <14 or >70 years
 - ◆ Male sex
 - ◆ Growth of the nodule
 - ◆ Firm or hard nodule consistency
 - ◆ Cervical adenopathy
 - ◆ Fixed nodule
 - ◆ Persistent dysphonia, dysphagia, or dyspnea
- Iodinated CT contrast may interfere with diagnostic nuclear medicine thyroid scans (scintigraphy) and radioiodine treatment.
- There is insufficient evidence supporting the use of PET to distinguish indeterminate thyroid nodules that are benign from those that are malignant.
- ¹⁸FDG-PET imaging is not routinely recommended for the evaluation of thyroid nodules with indeterminate cytology. Routine preoperative ¹⁸FDG-PET scanning is not recommended.

Neck-8.2: Hyperthyroidism

- Hyperthyroidism suspected^{4,7}
 - ◆ Thyroid Uptake Study (CPT[®] 78012 or CPT[®] 78014) if ONE of the following:
 - TSH below normal range and elevated free T4 and/or free T3, OR
 - Subclinical hyperthyroidism with TSH <0.1 mU/L and normal free T4 and free T3.

Neck-8.3: Parathyroid Imaging

- Primary Hyperparathyroidism suspected
 - ◆ Parathyroid Planar Imaging (CPT® 78070), Parathyroid Planar Imaging with SPECT (CPT® 78071), Parathyroid Planar Imaging with SPECT and CT (CPT® 78072) or Ultrasound (CPT® 76536) if either:
 - Elevated serum calcium and elevated serum parathyroid hormone level.
 - Serum calcium 1 mg/dL more over lab normal value
 - ◆ CT or MRI Neck without and with contrast (CPT® 70492 or CPT® 70543):
 - Very high calcium (≥ 13) suggesting parathyroid carcinoma
 - Preoperative localization including 4D CT Neck without and with contrast (CPT® 70492 or CPT® 77293).⁷
 - Recurrent or persistent hyperparathyroidism following neck exploration (MRI preferred).
 - ◆ CT Chest with contrast may be indicated in rare circumstances in the evaluation of ectopic mediastinal parathyroid adenomas.⁶

Practice Notes

- A thyroid nodule is distinct either on palpation or radiologically (incidentaloma). Nonpalpable nodules have the same risk of cancer as palpable. Nodules >1 cm are evaluated, while smaller nodules are generally evaluated if suspicious, associated with adenopathy or a history of radiation or cancer exists.
- Ultrasound is not used to screen: 1) the general population, 2) patients with normal thyroid on palpation with a low risk of thyroid cancer, 3) patients with hyperthyroidism, 4) patients with hypothyroidism or 5) patients with thyroiditis. Conversely, US can be considered in patients who have no symptoms but are high risk as a result of: history of head and neck irradiation, total body irradiation for bone marrow transplant, exposure to fallout from radiation during childhood or adolescence, family history, thyroid cancer syndromes such as MEN2, medullary or papillary thyroid cancer, Cowden's disease, familial adenomatous polyposis, Carney complex, Werner syndrome/progeria.
- Radionuclide thyroid scan can be considered to evaluate nodules when hyperthyroidism is present, for surveillance of thyroid cancer, or to detect non-palpable nodules. This scan is not useful for other nodules since hyper functioning nodules rarely harbor malignancy. Thyroid nodules >4 cm may be considered for thyroid lobectomy due to a high incidence of both false negative FNA biopsies and malignancy (26%).
- FNA may be repeated after an initial non-diagnostic cytology result, because repeat FNA with US guidance will yield a diagnostic cytology specimen in 75% of solid nodules and 50% of cystic nodules. However, up to 7% of nodules continue to yield non-diagnostic cytology results despite repeated biopsies and may be malignant at the time of surgery.

- Thyroid nodules may be stratified as to risk of thyroid cancer based on sonographic findings of microcalcification, hypervascularity on Doppler ultrasound, solid or cystic nature of mass and margins of mass.
- Incidental focal FDG-PET uptake often corresponds to a clinically relevant thyroid nodule and ultrasound is recommended; incidentally noted diffuse thyroid FDG-PET uptake most often corresponds to inflammatory uptake, however, ultrasound should be done to ensure that there is no evidence of clinically relevant nodularity.
- Elastography provides information about nodule stiffness that is complementary to gray scale ultrasound findings in nodules with indeterminate cytology or ultrasound findings. It should not be used as a substitute for gray scale ultrasound.
- Use of ultrasound contrast medium is not recommended for the diagnostic evaluation of thyroid nodules and its current use is restricted to definition of size and limits of necrotic zones after minimally invasive nodule ablation techniques.

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Thyroid

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Parathyroid

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Neck-9: Trachea and Bronchus

Neck-9.1: Trachea and Bronchus – Imaging

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Neck-9.1: Trachea and Bronchus – Imaging

- Plain x-rays neck and chest and bronchoscopy are the initial imaging studies for evaluating patients with suspected tracheal and visualized bronchial pathology. Bronchoscopy can further evaluate the distal (endo) bronchial tree.
 - ◆ Suspected tracheal disease can be identified by inspiratory stridor and a characteristic flow-volume loop of PFTs.¹
- CT Neck with contrast (CPT® 70491) or without contrast (CPT® 70490) and/or CT Chest with contrast (CPT® 71260) or without contrast (CPT® 71250) can be performed to further evaluate abnormalities, which include tracheal or bronchial tumor, foreign bodies, or persistent segmental or lobar lung collapse seen on other imaging studies.^{1,2}
- Expiratory HRCT (CPT® 71250) is indicated in patients with obstructive physiology tracheomalacia.¹
- Trachea or bronchial “inspissation” without an abnormality described above, is not a risk for malignancy.³

References

1. Dyer DS, Mohammed T-LH, Kirsch J, et al. ACR Appropriateness Criteria® Chronic dyspnea: suspected pulmonary origin. Am Coll Radiol (ACR). Date of origin: 1995. Last review date: 2012.
2. Accessed November 16, 2017 <https://acsearch.acr.org/docs/69448/Narrative/>.
3. Obusez EC, Jamjoom L, Kirsch J, et al. Computed tomography correlation of airway disease with bronchoscopy: part I--nonneoplastic large airway diseases. Curr Probl Diagn Radiol. 2014 Sep-Oct;43(5):268-277. Accessed November 16, 2017. [http://www.cpdjournal.com/article/S0363-0188\(14\)00038-3/fulltext](http://www.cpdjournal.com/article/S0363-0188(14)00038-3/fulltext).
4. Gould MK, Donington J, Lynch WR, et al. Evaluation of individuals with pulmonary nodules: when is it lung cancer? Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. Chest. 2013 May;143(5):e93S-e120S. Accessed November 16, 2017. [http://journal.chestnet.org/article/S0012-3692\(13\)60291-3/fulltext](http://journal.chestnet.org/article/S0012-3692(13)60291-3/fulltext).

Neck-10: Neck Pain

Neck-10.1: Neck Pain (Cervical)	28
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Neck-10.1: Neck Pain (Cervical)

- Neck pain is usually related to a specific process including pharyngitis, radiculopathy, adenopathy, mass, carotid dissection and torticollis, and therefore found elsewhere in these guidelines.¹
- For the evaluation of neck pain or other symptoms which may involve the cervical spine, including myelopathy and cervical radiculopathy¹ See **Spine Imaging Guidelines**

Neck-10.2: Torticollis and Dystonia

Older Child (beyond infancy) or Adult¹

- For trauma, CT Neck with contrast (CPT[®] 70491) and/or CT Cervical Spine without contrast (CPT[®] 72125) is the initial study to identify fracture or mal-alignment
- For no trauma, CT Neck with contrast (CPT[®] 70491), and/or MRI Cervical Spine without contrast (CPT[®] 72141), or CT Cervical Spine without contrast (CPT[®] 72125) is the initial study to locate a soft tissue or neurological cause
 - ◆ Positive→Further advanced imaging is not required if CT Neck or CT Cervical Spine has identified local cause
 - ◆ Negative→MRI Brain without and with contrast (CPT[®] 70553) to exclude CNS cause

Practice Notes

- Torticollis or cervical dystonia is an abnormal twisting of the neck with head rotated or twisted. Its causes are many and may be congenital or acquired and caused by trauma, infection/inflammation, neoplasm and those less defined and idiopathic. It occurs more frequently in children and on the right side (75%).
- Retropharyngeal space abscess could be associated with torticollis because child would not move neck freely.

References

1. ACR Appropriateness Criteria[®] Cervical Neck Pain or Cervical Radiculopathy. *Am Coll Radiol (ACR)*. Date of origin: 1998. Last review date: 2018.
2. Haque S, Shafi BBB, Kaleem M. Imaging of torticollis in children. *Radiographics*, 2012;32(2):557-571.
3. Boyko N, Eppinger MA, Straka-DeMarco D, Mazzola CA. Imaging of congenital torticollis in infants: a retrospective study of an institutional protocol. *Journal of Neurosurgery*, 2017;20(2):111-212.

Neck-11: Salivary Gland Disorders

- Xerostomia (Dry Mouth)
 - ◆ Salivary Gland Nuclear Imaging (one of CPT® 78230, CPT® 78231, or CPT® 78232) can be considered for any one of the following:
 - Dry mouth and either:
 - Sjögren's syndrome
 - Sialadenitis
 - History of head or neck radiation therapy
 - History of cerebral palsy
 - Parotid mass to allow preoperative diagnosis of Warthin's tumor
- Salivary Gland Stones:¹
 - ◆ CT Neck without contrast (CPT® 70490) or CT Neck without and with contrast (CPT® 70492) or CT Maxillofacial area without and with contrast (usually CPT® 70488) or MRI Neck without and with contrast (CPT® 70543) for suspected salivary duct or gland stone.
 - ◆ Sialography (contrast dye injection) under fluoroscopy, may be performed to rule out a stone, with post sialography CT (CPT® 70486), **or** post sialography MRI (CPT® 70540).
- Parotid or Salivary Gland Mass
 - ◆ Any ONE of the following can be approved:²
 - MRI Orbits/Face/Neck without and with contrast (CPT® 70543)
 - CT Neck with contrast (CPT® 70491)
 - CT Neck without contrast (CPT® 70490)

References

1. Wilson KF, Meier JD, and Ward PD. Salivary gland disorders. *Am Fam Physician*. 2014 Jun;89(11):882-888..
2. ACR Appropriateness Criteria® Neck mass/adenopathy. American College of Radiology (ACR). Date or origin: 2009. Last review date: 2018.