

AI-01879 Neck Exam and Ddx

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Explain the medical neck examination. What is the objective? If the neck is swollen, left side and slightly painful, perform DDx.

The medical neck examination is a crucial part of a physical assessment, providing insights into various systems including the musculoskeletal, lymphatic, endocrine (thyroid), vascular, and neurological systems.

Objective of the Neck Examination:

The primary objective of the neck examination is to identify any abnormalities, tenderness, masses, or limitations in movement that could indicate underlying medical conditions. Specifically, it aims to:

- Assess range of motion: Evaluate the flexibility and movement of the cervical spine in all directions (flexion, extension, lateral flexion, rotation) to detect stiffness, pain, or neurological compromise.
- Palpate lymph nodes: Check for enlarged, tender, or firm lymph nodes, which can be indicative of infection, inflammation, or malignancy. Key areas include preauricular, postauricular, occipital, tonsillar, submandibular, submental, superficial cervical, deep cervical, posterior cervical, and supraclavicular nodes.
- Examine the thyroid gland: Palpate the thyroid for size, shape, consistency, tenderness, and presence of nodules. Auscultate for bruits if enlargement is noted.
- Inspect and palpate the trachea: Assess for tracheal deviation, which could suggest mediastinal shift due to conditions like pneumothorax or masses.
- Examine blood vessels: Auscultate the carotid arteries for bruits (indicating turbulent blood flow, e.g., atherosclerosis) and palpate pulses.

- Inspect for JVD (Jugular Venous Distension): Assess for signs of elevated central venous pressure, often indicative of heart failure.
- Assess muscle tenderness and spasm: Palpate the neck muscles (e.g., sternocleidomastoid, trapezius) for tenderness, spasms, or trigger points.
- Identify masses or swellings: Locate and characterize any abnormal swellings, noting their size, shape, consistency, mobility, tenderness, and whether they are pulsatile.

Differential Diagnosis (DDx) for a Swollen, Left-Sided, Slightly Painful Neck:
 When a patient presents with a swollen, left-sided, and slightly painful neck, several conditions need to be considered. The differential diagnosis can be broadly categorized based on the most likely anatomical structures involved:

1. Lymph Node Related:

- Lymphadenitis: Inflammation of one or more lymph nodes, commonly due to infection (bacterial, viral, fungal). This is a very common cause of painful, swollen lymph nodes.
 - Infectious Mononucleosis: A viral infection (Epstein-Barr virus) that often causes significant generalized lymphadenopathy, including in the neck, along with fatigue and sore throat.
 - Strep Throat/Other Upper Respiratory Infections (URIs): Bacterial or viral infections of the throat can cause reactive lymphadenopathy in the neck, particularly in the tonsillar and submandibular regions.
 - Tuberculosis (Scrofula): Tuberculous lymphadenitis can cause chronic, firm, sometimes painful lymph node enlargement, often in the cervical region.
 - Cat Scratch Disease: Caused by *Bartonella henselae*, usually after a cat scratch or bite, leading to regional lymphadenopathy.
- Lymphoma: Malignant proliferation of lymphocytes within the lymph nodes (e.g., Hodgkin lymphoma, non-Hodgkin lymphoma). These nodes are often firm, non-tender (though sometimes tender if growing rapidly), and progressively enlarge.
- Metastatic Cancer: Cancer cells from a primary tumor elsewhere in the body (e.g., head and neck cancers, lung cancer, breast cancer) can spread to

cervical lymph nodes, causing firm, often non-tender, enlarged nodes.

- Lymphangioma/Cystic Hygroma: Congenital lymphatic malformations that can present as soft, compressible, non-tender masses, though they can become inflamed and tender.

1. Salivary Gland Related:

- Sialadenitis: Inflammation of a salivary gland, most commonly the submandibular gland on the left side (if the swelling is in that region) or parotid gland. Can be due to infection (bacterial, viral like mumps), salivary duct obstruction (sialolithiasis - salivary stone). Pain is often worse with eating.
- Salivary Gland Tumor: Benign (e.g., pleomorphic adenoma) or malignant tumors can cause a firm, sometimes painful, swelling.

1. Musculoskeletal Related:

- Torticollis (Wry Neck): Spasmodic contraction of the sternocleidomastoid muscle, causing the head to tilt and rotate. While primarily a muscle issue, the muscle itself can feel swollen and be very painful. Can be acute (e.g., due to awkward sleeping position, viral infection) or congenital.
- Muscle Strain/Spasm: Injury or overuse of neck muscles (e.g., sternocleidomastoid, trapezius) can lead to localized swelling, tenderness, and pain.
- Cervical Spondylosis/Herniated Disc (with referred pain/swelling sensation): While less likely to cause overt swelling, cervical spine issues can cause significant neck pain that might be perceived as swelling due to muscle guarding and inflammation. Radiculopathy can cause radiating pain.

1. Thyroid Gland Related (less likely to be localized to only the left side and painful unless specific pathology):

- Thyroiditis: Inflammation of the thyroid gland (e.g., Hashimoto's thyroiditis, subacute thyroiditis, postpartum thyroiditis). Can cause diffuse or localized pain and tenderness.
- Thyroid Nodule/Cyst: A discrete lump in the thyroid. While often non-tender, a rapidly growing or hemorrhagic nodule/cyst can cause pain and localized

swelling. Malignant nodules are typically non-tender, but can present with pain if they are large or invasive.

1. Vascular/Other:

- Carotid Artery Aneurysm/Dissection: Rare but serious. A carotid aneurysm could present as a pulsatile mass. A dissection can cause severe neck pain, often unilateral, and can be associated with neurological symptoms.
- Branchial Cleft Cyst: Congenital cysts that can become infected and painful, appearing as a swelling along the anterior border of the sternocleidomastoid muscle.
- Thyroglossal Duct Cyst: While typically midline, an infected thyroglossal duct cyst can present as a painful, swollen mass in the neck, sometimes slightly off-center.
- Abscess/Cellulitis: A localized collection of pus (abscess) or a spreading bacterial infection of the skin and subcutaneous tissues (cellulitis) can cause a red, hot, tender, and swollen area. This is often accompanied by fever and malaise.

Approach to Diagnosis:

To differentiate between these conditions, a thorough history and physical examination are crucial. Key questions and findings include:

- Onset and duration: Acute vs. chronic.
 - Associated symptoms: Fever, chills, sore throat, cough, dental pain, ear pain, fatigue, weight loss, night sweats, difficulty swallowing, voice changes.
 - Recent infections or injuries: Upper respiratory infections, dental procedures, trauma.
 - Travel history or exposures: TB, unusual infections.
 - Characteristics of the swelling: Size, consistency (soft, firm, rubbery, hard), mobility, tenderness, warmth, redness, pulsatility.
 - Systemic symptoms: Fever, weight changes, constitutional symptoms.
- Based on the clinical findings, further investigations may include blood tests (CBC, inflammatory markers, thyroid function tests, monospot test),

ultrasound of the neck, CT scan or MRI, fine needle aspiration (FNA) of a mass, or biopsy.

Here is a differential diagnosis (DDx) for a healthy 57-year-old Asian female who presents with acute left-sided neck pain and mild swelling, with no other symptoms and a background of healthy lifestyle and early retirement in Cebu, Philippines:

Key Clinical Clues:

- Female, age 57
- No comorbidities
- Lives comfortably, walks 3 miles regularly
- Acute left neck pain
- Mild visible swelling on the left side
- No fever, trauma, neurologic symptoms, or systemic illness
- No upper respiratory symptoms
- No known masses or prior similar symptoms

DIFFERENTIAL DIAGNOSIS (DDx)



1. Cervical Muscle Strain / Spasm

- Most Likely (common and benign)
- Pain after turning, sleeping wrong, or minor overuse (e.g. long walks, posture)
- Associated with stiffness and localized tenderness
- Swelling may be due to muscle spasm or inflammation



2. Lymphadenitis / Reactive Cervical Lymphadenopathy

- Acute inflammation of lymph nodes from a recent (often unnoticed) viral or bacterial trigger

- Swelling may be subtle and painful
- Common in tropical regions even without overt infections
- Often self-limited



3. Cervical Facet Joint Arthropathy / Degenerative Disc Disease

- Due to age-related changes
- May cause unilateral neck pain radiating to the shoulder
- Swelling may be minimal or due to protective muscle tension



4. Dental or Oropharyngeal Infection

- Sometimes referred pain to the neck from molar/root issues or periodontal disease
- Check for gum issues, recent dental procedures, sore throat, or mouth ulcers



5. Thyroid Nodule or Thyroiditis (e.g., Subacute or Silent Thyroiditis)

- Left lobe of thyroid lies in the anterior neck, may feel like swelling
- Painful in subacute (De Quervain's) thyroiditis, often post-viral
- May have slight tenderness and no systemic signs early on



6. Salivary Gland Pathology (e.g., Submandibular Sialadenitis or Stone)

- Pain and swelling near the jaw/neck angle
- Worse during meals
- Look for dry mouth or lump under tongue



7. Early Presentation of Herpes Zoster (Shingles)

- Can cause pain before the rash appears

- Especially in cervical dermatome (C3–C5)
- Sudden sharp pain may be prodromal sign



8. Skin or Subcutaneous Infection (e.g., Early Abscess or Insect Bite)

- Redness and tenderness may develop later
- Especially in hot humid environments
- Look for small bite marks or boils



Workup and Next Steps

1. Physical Exam:

- Palpate neck for lymph nodes, thyroid enlargement, muscle spasm
- Examine oral cavity and submandibular area
- Check for skin lesions, dental issues

2.

3. Red Flags to Rule Out:

- Fever, weight loss, night sweats
- Difficulty swallowing or breathing
- Neurologic signs
- History of cancer

4.

5. Consider Investigations if Persistent or Worsening:

- Neck ultrasound: to rule out thyroid nodules or lymphadenopathy
- CBC with diff & ESR/CRP: to assess inflammation
- Thyroid function tests: TSH, T3, T4
- Dental or ENT referral if oral or gland-related signs
- Cervical spine X-ray if pain persists >2 weeks or has radicular symptoms

6.



Summary

In an otherwise healthy 57F, muscle strain, reactive lymph node, or subacute thyroiditis are top considerations. Conservative treatment like warm compress, gentle stretching, and monitoring may be sufficient if no red flags are present. However, if swelling increases, pain worsens, or new symptoms arise, imaging and labs are recommended.

Would you like a home management plan or a red flag checklist for when to seek help?