

Class 5 PHE Notes

The head and neck

1. Hair, skin, bones, facial expression, eyes, nose, sinuses, mouth, ears, lymph nodes, carotid artery and jugular vein, hyoid, cartilages trachea and thyroid gland, skin, spine, muscles

Anterior cervical triangle: the mandible above, the SCM muscle laterally, and the midline of the neck medially.

Posterior cervical triangle: the SCM muscle, the trapezius, and the clavicle. Note that a portion of the omohyoid muscle crosses the lower portion of this triangle and can be mistaken for a lymph node or mass.

HEENT: Head—The skull is normocephalic/attraumatic (NC/AT). Hair with average texture. Eyes—Visual acuity 20/20 bilaterally. Sclera white, conjunctiva pink. Pupils are 4 mm constricting to 2 mm, equally round and reactive to light and accommodations. Disc margins sharp; no hemorrhages or exudates, no arteriolar narrowing. Ears—Acuity good to whispered voice. Tympanic membranes (TMs) with good cone of light. Weber midline. AC > BC. Nose—Nasal mucosa pink, septum midline; no sinus tenderness. Throat (or mouth)—Oral mucosa pink, dentition good, pharynx without exudates. Neck—Trachea midline. Neck supple; thyroid isthmus palpable, lobes not felt. Lymph Nodes—No cervical lymphadenopathy

- A. Eyes – ophthalmoscope
- B. Ears – otoscope
- C. Nose – rhinoscope

Common symptoms for head and neck

1. Headache
2. Neck pain
3. Neck mass
4. Thyroid mass

Neck mass – have you noticed mass in your neck? When did you notice/ How did you notice? Is it painful, and changes over time? Any other lumps before this.

Mass in patients' neck >40 – exclude cancer.

Enlarged tender lymph nodes commonly accompany pharyngitis.

Thyroid mass, nodules , goiter

Techniques of examination

1. Observation, palpation, percussion, auscultation
2. Hair – quantity, quality, distribution, texture, any loss, look for dandruff
 - a. Fine hair – hyperthyroidism
 - b. Coarse hair – hypothyroidism
3. Scalp – scales, nevi, lesions – melanoma
4. Skull – observe and palpate – deformities, lumps lesions, tenderness
5. Face – facial expression, contours, symmetry, involuntary movements, edema, masses
 - a. Cushing's – moon face (round face) with red cheeks, excessive hair growth (chin, sideburns, mustache, chest)
 - b. Nephrotic syndrome – pale, edematous face, swelling tend to start around eyes and will be more severe around eyes. Worse in the morning
 - Loss of albumin by glomeruli
 - c. Myxedema - non pitting edema – dull and puffy face, coarse hair, dry skin
 - d. Parotid gland enlargement – swelling anterior to the ear and above the angle of mandible
 - e. Acromegaly – head becomes large and elongated, with bony prominences of the forehead, nose, lower jaw. Also, large lips and ears.
 - f. Parkinson's – mask like face (decreased facial mobility, stares, do not blink. Neck flexion forward. Drool and skin very oily.
6. Skin – inspect cancer, acne, hirsutism, alopecia, lesions
 - a. Systemic lupus erythematosus - Malar erythema (mid cheeks, spans bridge of nose), relative sparing of nasolabial folds, periungual erythema, interphalangeal erythema

- b. Sarcoidosis - Red-brown plaques, often annular, typically involving the head and neck and especially the nose and ears; may show apple jelly color with dermoscopy
 - c. Rocky Mountain spotted fever - pink or reddish papules progressing to purpuric papules; starts on wrists and ankles and spreads to palms and soles and then to trunk and face
 - d. Kawasaki disease - Mucosal erythema (lips, tongue, and pharynx), strawberry tongue, cherry red lips, polymorphous rash (primarily on trunk), erythema of palms and soles with later desquamation of fingertips
 - e. Hypothyroidism - Dry, rough, and pale skin; coarse and brittle hair; myxedema; alopecia (lateral third of the eyebrows to diffuse); skin cool to touch; thin and brittle nails
 - f. Hyperthyroidism - Warm, moist, soft, and velvety skin; thin and fine hair; alopecia; vitiligo; pretibial myxedema (in Graves' disease); hyperpigmentation (local or generalized)
 - g. Hemochromatosis - Skin bronzing and hyperpigmentation
 - h. Dyslipidemias – xanthelasma is yellowish plaques that occur most commonly near the inner canthus of the eyelid, more often on the upper lid than the lower lid (may also occur in healthy people)
 - i. Diabetes - Acanthosis nigricans: thicker and darker patches or streaks, usually in skin creases and folds, such as the sides and back of the neck, armpits, elbow pits, and groin. But it can show up anywhere on the body.
 - j. CREST syndrome - Calcinosis, Raynaud phenomenon, sclerodactyly, matted telangiectasias of face and hands (palms)
7. Lymph nodes
- a. Using the pads of your fingers and you will gently palpate nodes by rolling skin over the node
 - b. Occipital – palpate at the base of the skull
 - c. Postauricular (posterior auricular) – posterior to the ear and superficial to the mastoid process
 - d. Preauricular – palpate in front of the ear
 - e. Tonsillar (jugulodigastric) – palpate at the angle of the mandible (behind). These are not tonsils (found in throat and are lymphoid tissue)

- f. Submandibular – palpate under mandible from angle to tip
- g. Submental – palpate in the midline behind the tip of the mandible
- h. Anterior superficial cervical – palpate along anterior and superficial to SCM
- i. Posterior cervical – palpate anterior to upper trapezius (between upper trapezius and SCM and clavicle = posterior cervical triangle)
- j. Deep cervical chain – palpate deep SCM, hook fingers around SCM
- k. Supraclavicular – palpate in the angle between SCM and clavicle (supraclavicular fossa – behind the clavicle and extends slightly above)
- l. Virchow's node – enlarged left supraclavicular lymph node – metastasis from thoracic or abdominal cancer
- m. You find the node – location, size, shape, mobility, consistency, tenderness. Small, mobile, discrete, nontender anterior cervical superficial lymph node 2x2 cm in diameter
- n. Tender and swollen = inflammation, infection
- o. Fixed node = malignancy
- p. Lymphadenopathy – infection, inflammation, cancer, reactive (can react and enlarge for no underlying reason)
- q. What can you mistaken for lymph node – muscle, bone projections, arteries
 - Lymph nodes can be rolled side to side and up/down

Midline anterior structures of the neck

1. From cephalic (superior) to caudal (inferior) – hyoid bone, thyroid cartilage, cricoid cartilage, thyroid gland, trachea
2. Thyroid gland
 - a. Observation and palpation
 - b. Palpation – anterior and posterior
 - c. Posterior – find the cricoid cartilage, second finger at that cartilage, other over thyroid gland. Patient swallows water and you feel for thyroid sliding up and down. Both hands – lobes and isthmus, one lobe at the time with one hand
 - d. Size, consistency, presence of nodes, tenderness
 - e. Retrosternal goiter can cause hoarseness, shortness of breath, stridor and dysphagia

- f. Thyroid gland in Grave's disease – soft and enlarged
 - g. Thyroid gland in Hashimoto's – firm
 - h. Solitary nodule – cancer – ultrasound and fine needle biopsy. Only 5% are cancers
3. Trachea
- a. Inspect and palpate for any deviations. Usually in the middle. Determine distance of trachea from each SCM, spaces should be symmetrical.
 - Deviation: mediastinal mass, atelectasis and pneumothorax
 - b. Auscultation – breath sounds and count RR. Stridor that can indicate upper respiratory tract obstruction
 - c. Stridor – ominous, high pitched musical sound that can be caused by tracheal obstruction, subglottic obstruction. Epiglottitis, foreign body, goiter
4. Carotid artery and jugular veins
- a. Patient supine with head tilted to 30 degrees
 - b. Carotid pulse and auscultate for bruits
 - c. Jugular venous distention – heart failure

Ears

1. Hearing loss
- a. One or both ears? Equal or not? Sudden? (Refer to otolaryngologist), Gradual?
 - b. Conduct or sensorineural hearing loss
 - c. Sensory – Problems with processing of the sound
 - d. Any other associated symptoms
2. Earache and ear discharge
- a. Fever, sore throat, cough, nasal discharge, upper respiratory tract infection
 - b. Acute otitis media, acute otitis externa
 - c. Referred pain to the ear from mouth/TMJ, throat
 - d. Yellow green discharge – infection
3. Tinnitus
- a. Perceived sound that has no external stimulus – musical ringing, rushing, roaring noise.
 - b. Hearing loss, tinnitus, vertigo – Meniere disease

4. Dizziness and vertigo
 - a. Subjective and nonspecific
 - b. Vertigo – room spinning or tilting, rotational movement (CN VIII, inner ear, brain)
 - c. Syncope – passing out feeling
 - d. Disequilibrium – loss of balance, feeling of unsteadiness
 - e. Vertebral artery syndrome – movement of the head produces symptoms
5. Ear
 - a. Auricle – inspect it for deformities, lumps, skin lesions
 - b. Move the auricle up and down and observe for any discharge, pain (acute otitis externa)
 - c. Tap over mastoid process – tenderness or pain – Acute otitis media or mastoiditis
 - d. Patient has acute otitis media which presented with pain in the right ear. There also was yellow green discharge and mild fever. Patient is now in your office complaining of more pain. On examination there is postauricular swelling, fluctuance, erythema and moderate pain on palpation. What has developed in this patient? – Mastoiditis
 - e. Same patient, but different complication – on examining tympanic membrane there visible hemorrhagic cyst – bullous myringitis
 - f. Otoscopy – otoscope – external ear canal, tympanic membrane – gray, light reflex, white projection of middle ear bones
 - g. One hand will move auricle to straighten external ear canal and with other you will place otoscope in the canal
6. Testing for hearing
 - a. Whispering voice test for auditory acuity
 - Tell patient you will whisper sequence of numbers and letters, 4-K-2, 5-C-3
 - Stand 2 ft away/arms length away, behind the patient
 - Test each ear individually. Occlude the other ear and gently rub the tragus in a circular motion to prevent transfer of the sound
 - If the patient can 3 out of 6 patient passes the test
 - If the patient repeats less than 3 words correctly further testing by audiometry

7. If the patient fails, the whispering voice test to differentiate between conducting and sensory hearing loss examiner can perform tuning fork test (512 Hz)
- a. Weber test - vibrating tuning fork is placed on the top of the patient head (midforehead) – ask the patient where do you hear sound the best. Norm – center or equally on both sides. Lateralization (lateralization test). . Best used if there is hearing loss in one ear (unilateral hearing loss)
 - In unilateral conductive hearing loss, sound is heard in (lateralized to) impaired ear. (Cerumen, otosclerosis, otitis media, perforation of ear drum)
 - Unilateral sensory loss – sound is heard in good ear
 - b. Rinne test – compares bone conduction (BC) with air conduction (AC) of the sound. Place vibrating tuning fork on the mastoid process. When patient cannot hear sound place the tuning fork in front of ear and ask if patient still can hear the sound. In norm – $AC > BC$
 - In conductive hearing loss sound through bone will be heard longer or the same as air conduction ($AC = BC$, $AC < BC$)
 - Sensory hearing loss: $AC > BC$
 - c. Conductive hearing loss – right ear hearing loss
 - Sometimes issue is visible
 - Improves in noisy environment. Voice remains soft
 - Weber: sound lateralized to impaired ear (right ear)
 - Rinne test: Right ear $AC < BC$ and left ear $AC > BC$
 - d. Sensory (Sensorineural) – right ear hearing loss
 - Problem not visible to the eye
 - Higher registers are lost and sound is distorted, and it gets worse in noisy environment. Voice may be loud.
 - Weber: sound lateralizes to the good ear (left ear)
 - Rinne: Right ear $AC > BC$ and Left ear $AC > BC$