"Head and Neck Lymph Drainage"

》 Overview of Lymph Node Groups

• The lymph nodes of the head and neck are arranged in three groups:

(1) A pericervical collar that extends from below the chin to the back of the head

(2) A regional cervical group located in the neck proper

(3) A deep terminal group that is embedded in the carotid sheath in the neck

<- Pericervical Collar Nodes ->

》 General Characteristics

• The pericervical collar is a series of several regional groups of nodes arranged roughly in a ring around approximately the junction of the head and neck

• The superficial tissues of the head drain into:

- Appropriately placed groups in the collar

- Or directly into the superficial cervical nodes

• Basic drainage principle: Tissues drain into the nodal group located most closely

• Note: Lymph vessels and nodes do not occur in the cranial cavity or orbit

》 Arrangement of Pericervical Nodes

> Occipital Nodes

• Location: Over the occipital bone on the back of the skull

• Drainage:

- Receive lymph from the back of the scalp

> Mastoid (Retroauricular) Nodes

• Location: Behind the ear, over the mastoid process

• Drainage: Receive lymph from:

- The scalp above the ear
- The auricle

- The external auditory meatus

> Parotid Nodes

- Location: On or within the parotid salivary gland

- Drainage: Receive lymph from:
  - The scalp above the parotid gland
  - The eyelids
  - The parotid gland itself
  - The auricle
  - The external auditory meatus

> Buccal (Facial) Nodes

- Number & Location: One or two nodes lie in the cheek over the buccinator muscle

- Drainage: Drain lymph that ultimately passes into the submandibular nodes

> Submandibular Nodes

• Location: Superficial to the submandibular salivary gland, just below the lower margin of the jaw

• Drainage: Receive lymph from:

- The front of the scalp
- The nose
- The cheek
- The upper lip and the lower lip (except the central part)
- The frontal, maxillary, and ethmoid sinuses
- The upper and lower teeth (except the lower incisors)
- The anterior two-thirds of the tongue (except the tip)
- The floor of the mouth and vestibule
- The gums

> Submental Nodes

• Location: In the submental triangle, just below the chin

• Drainage: Drain lymph from:

- The tip of the tongue
- The floor of the anterior part of the mouth
- The incisor teeth
- The center part of the lower lip
- The skin over the chin

<- Cervical Regional Nodes ->

》 General Characteristics

• Regional groups of nodes located in a roughly vertical series in the neck proper

• Collect lymph from:

- The pericervical collar
- The superficial and deep tissues of the neck
- Anterior Cervical Nodes

• Location: Along the course of the anterior jugular veins in the front of the neck

• Drainage: Receive lymph from the skin and superficial tissues of the front of the neck

> Superficial Cervical Nodes

- Location: Along the course of the external jugular vein on the side of the neck

- Drainage: Drain lymph from:

- The skin over the angle of the jaw
- The skin over the lower part of the parotid gland
- The lobe of the ear

> Retropharyngeal Nodes

- Location: Behind the pharynx, in front of the vertebral column

- Drainage: Receive lymph from:

- The nasopharynx
- The auditory tube
- The vertebral column

> Laryngeal Nodes

- Location: In front of the larynx

- Drainage: Receive lymph from the larynx

> Tracheal (Paratracheal) Nodes

- Location: Alongside the trachea

- Drainage: Receive lymph from neighboring structures, including the thyroid gland

<- Deep Cervical Nodes ->

》 General Characteristics

- Form a vertical chain along the course of the internal jugular vein, within the carotid sheath

- Extend from the base of the skull to the root of the neck

- Drainage: Receive lymph from all the groups of regional nodes

- Function: Terminal group of nodes in the neck

> Jugulodigastric Node

- Location: Below and behind the angle of the jaw

- Associated Drainage: Mainly concerned with drainage of the tonsil and the tongue

> Jugulo-omohyoid Node

- Location: Situated close to the omohyoid muscle

- Associated Drainage: Mainly associated with drainage of the tongue

> Efferent Vessels and Final Drainage

- Efferent lymph vessels from the deep cervical nodes join to form the jugular trunks

- Left jugular trunk:

- Usually empties into the thoracic duct

- Right jugular trunk:

- Drains into the right lymphatic duct

- Or independently into the region of formation of the right brachiocephalic vein

"Clinical Notes"

》 Clinical Significance of Cervical Lymph Nodes

• Lymph drainage of a region is clinically important in diagnosing underlying pathology.

• Enlarged lymph nodes may indicate:

- Infection
- Neoplastic (cancerous) conditions

• Physicians must know which body regions drain into specific nodes.

> Example: Submandibular Node

• Can be enlarged due to pathology in:

-.Scalp

- Face
- Maxillary sinus
- Tongue
- Infected upper/lower teeth

• A systematic examination of all areas draining into a particular node is required to identify the cause.

》 Deep Cervical Lymph Node Examination

• Positioning:

- Examiner should stand behind the patient
- Patient is asked to flex the neck slightly to relax neck muscles

• Examination technique:

- Follow a definite order to avoid skipping any node group

• If lymph nodes are enlarged, examine:

- Face
- Scalp
- Tongue
- Mouth
- Tonsils
- Pharynx

》 Carcinoma Metastases to Deep Cervical Nodes

• All lymph from head and neck ultimately drains to the deep cervical nodes

• Secondary cancer deposits in deep cervical nodes are common

• The primary tumor may be:

-> Easily identifiable, or
-> Small and hidden in sites like:

- Larynx
- Pharynx
- Cervical esophagus
- External auditory meatus

• Rarely, primary tumors may originate in:

- Bronchi
- Breast
- Stomach (In such cases, cancer has spread far from original site)

» Surgical Management: Block Dissection

• Indicated in cervical metastases

• Procedure:

- En bloc removal of:
- Internal jugular vein
- Fascia
- Lymph nodes
- Submandibular salivary gland

• Preserve:

- Carotid arteries
- Vagus nerve

• May require sacrificing:

- Hypoglossal nerve
- Vagus nerve (if cancer has invaded them)

» Bilateral Cervical Spread

• Bilateral block dissection may be necessary

- Wait 3-4 weeks before removing the second internal jugular vein to prevent vascular complications