# Cervical lymphadenopathy

Nidal A Younes, MBBSc, MA, TSRF

Professor Endocrine Surgery

Jordan University Hospital

4th year lectures 2022

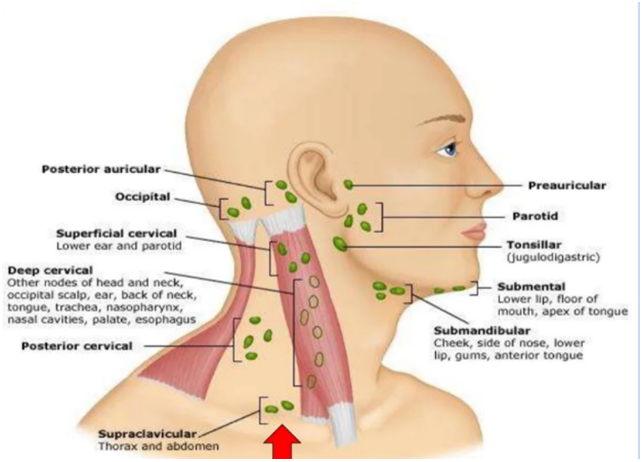
# Cervical Lymphadenopathy/presentation




38–45% of otherwise healthy children have palpable lymph nodes. Larsson et al

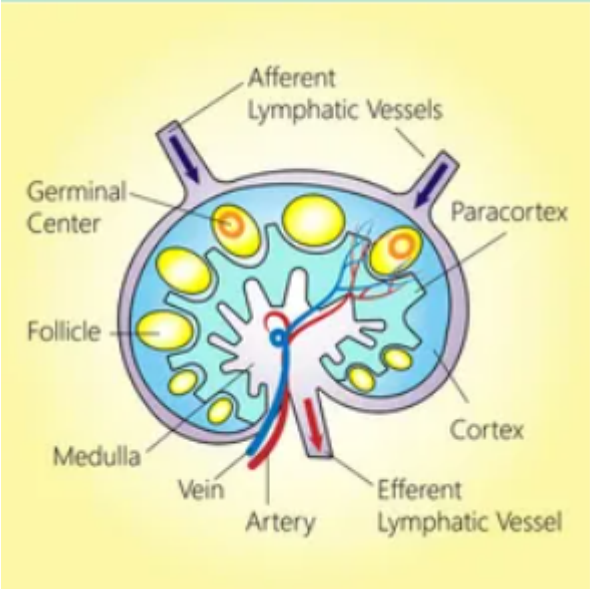
# Cervical Lymphadenopathy/Definition

- Lymph nodes that are abnormal in size >1 cm, consistency or number
  - Localized: one area involvement
  - Generalized: 2-or more noncontiguous areas



# Cervical Lymphadenopathy/Anatomy and physiology

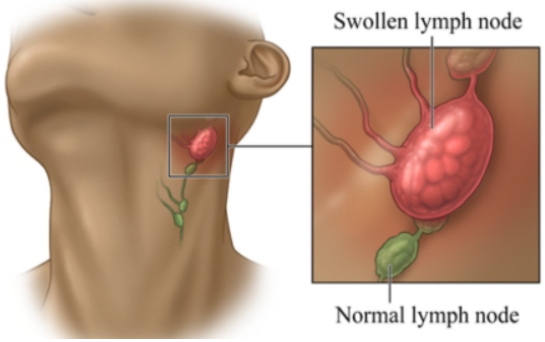
- To Sensitize the immune response
- To allow Contact between B-cells and T-cells
- To filter the lymph and remove MO and FB
- To return excess interstitial fluid to the blood
- To absorb fat- and fat-soluble vitamins



# Cervical Lymphadenopathy/Etiology

Why do lymph nodes enlarge?

- Increase in the # of benign lymphocytes and macrophages in response to Antigens
- Infiltration of inflammatory cells in infection
- Malignant proliferation of lymphocytes or macrophages
- Infiltration by metastatic cancer
- Infiltration by metabolite laden macrophages (lipid storage disease)




Causes of lymph nodes MIAMI

- Malignant
- Infectious
- autoimmune
- miscellaneous
- iatrogenic (due to medications).

# Cervical Lymphadenopathy/Duration
## Acute< 2 weeks

- Viral , Bacterial
  - Commonly from tonsillitis or a dental abscess
  - +ve constitutional symptoms ( fever, anorexia and malaise
  - Treatment of primary focus
  - Incision and drainage if abscess develops
- Immunologic ( less common)
  - Kawasaki disease
  - Kikuchi-Fujimoto disease
- Adverse drug reaction
- Histocytosis

| Suspected organisms | First-line therapy | Alternative therapy (if penicillin allergy) | Duration |
|---|---|---|---|
| Group A streptococci, *Staphylococcus aureus*, *Haemophilus influenzae* | Oral Augmentin 50 mg/kg/day Q12H<br>OR oral cephalexin 50 mg/kg/day Q8H<br>OR oral cloxacillin 50 mg/kg/day Q6H | Oral clindamycin 30 mg/kg/day Q8H | 10–14 days total duration (until symptom resolution) |
| Anaerobic bacteria | Oral Augmentin 50 mg/kg/day Q12H | Oral clindamycin 30 mg/kg/day Q8H | |

Q6H: every six hours; Q8H: every eight hours; Q12H: every 12 hours

# Cervical Lymphadenopathy/Duration

## Subacute< 2-6 weeks

- Infections
  - CMV, EBV,HIV
  - Non TB
  - TB
  - Toxo, Fungal

Unilateral

- Immunologic
  - SLE
  - JIA
  - Dermatomyositis

Bilateral, arthralgia, arthritis, rash

# Cervical Lymphadenopathy/Duration
## Chronic >6 weeks

- Malignancies
  - Hodgkin's
  - Acute leukemia
  - Rhabdomyosarcoma
  - Neuroblastoma
  - Metastatic
- Immunologic
  - Immunodeficiency
  - Chronic granulomatous disease
  - Hyperimmunoglobulin E syndrome
- Miscellaneous ( less common)
  - Sarcoidosis
  - TB
  - Storage disease

# Cervical Lymphadenopathy/ Risk factors

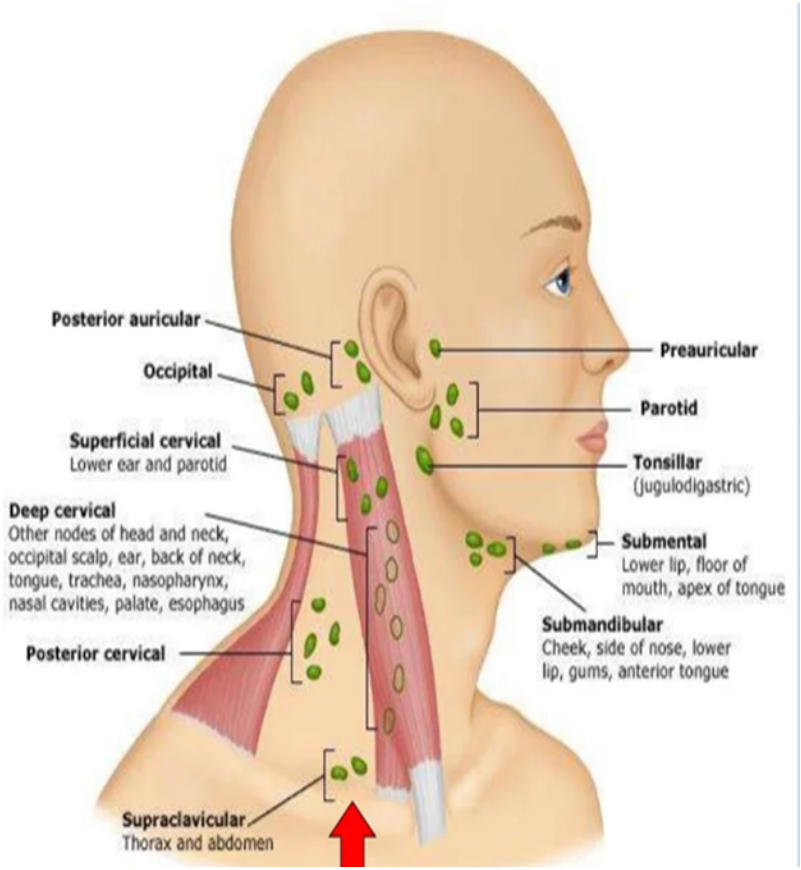
- Age
  - less than 30 years are clinically benign in 80% of cases
  - Over the age of 50 years only 40% benign
- Characteristics of the nodule
  - Hard-firm vs soft and fluctuant
- Location of the node
  - Supraclavicular lymph nodes are most worrisome
- Known primary CA
- Associated clinical setting
  - B –symptoms
  - wt. loss

**Box 1. Red flags in cases of cervical lymphadenopathy:**

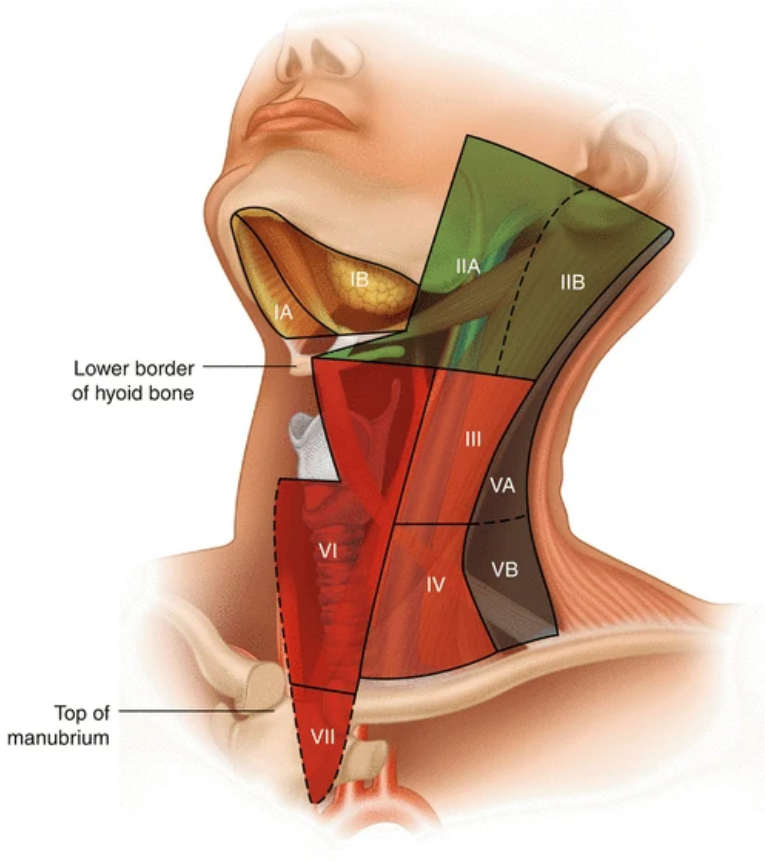
- Lymphadenopathy > 2 cm
- Steady increase in size over 2–3 weeks
- No improvement or decrease in size after 4–6 weeks
- Supraclavicular lymphadenopathy
- Hard, fixed, matted, non-tender lymphadenopathy
- Persistent fever lasting more than one week
- Signs and symptoms suggestive of malignancy: weight loss, petechiae, pallor, night sweats, hepatosplenomegaly
- Signs and symptoms suggestive of autoimmune disease: rash, arthralgia, arthritis, generalised lymphadenopathy
- Features suggestive of Kawasaki disease
- Abnormalities in full blood count or chest radiography

# Cervical Lymphadenopathy/Anatomical consideration

- The neck comprises of more than 300 lymph nodes
- They can be classified as the superficial group and the deep group.



# Cervical Lymphadenopathy/Anatomical consideration

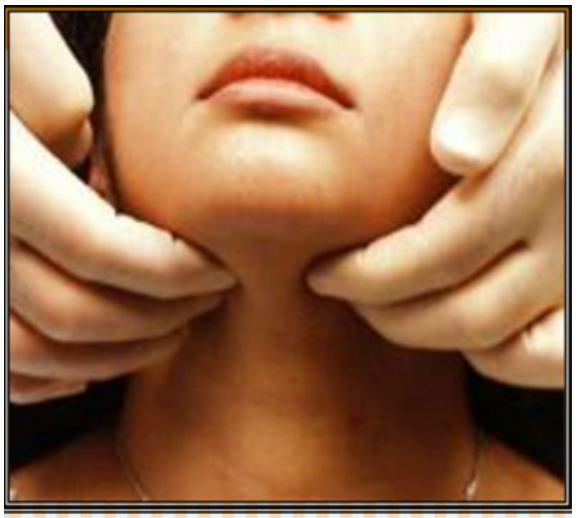



| Region | Drainage areas |
|---|---|
| Submental | Bottom lip, floor of mouth, skin of cheeks |
| Submandibular | Mouth, lips, tongue, submandibular gland, cheek |
| Preauricular | Anterior and temporal scalp, anterior ear canal and pinna, conjunctiva, parotids |
| Postauricular | Temporal and parietal scalp |
| Occipital | Posterior scalp |
| Upper, middle and lower cervical | Tongue, tonsils, larynx, oropharynx, anterior neck, scalp, lower ear canal, parotid |
| Posterior cervical | Scalp and neck |
| Supraclavicular | Mediastinum, lungs, abdomen |

# Cervical Lymphadenopathy/ clinical approach- history

- Site and duration
- Fever, systemic symptoms
- H&N complaints
- Dental complaints
- Head and Neck infections

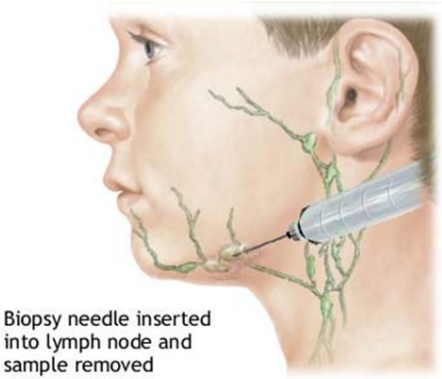
# Cervical Lymphadenopathy/ clinical examination



Site and size
Number
Tenderness
Consistency
Fixity
Examine h&N, scalp, teeth

# Cervical Lymphadenopathy/ investigations

- ROUTINE LABORATORY INVESTIGATIONS
  - COMPLETE HEMOGRAM AND PERIPHERAL SMEAR CANNOT BE OVEREMPHASIZED TO DIAGNOSE CLINICAL CONDITIONS LIKE MONONUCLEOSIS OR HEMATOLOGICAL MALIGNANCIES.
- IMAGING
  - NECK ULTRASOUND
  - CONTRAST ENHANCED COMPUTED TOMOGRAM
- TISSUE DIAGNOSIS
  - FINE NEEDLE ASPIRATION CYTOLOGY.
  - LYMPH NODE BIOPSY



Biopsy needle inserted into lymph node and sample removed

A.D.A.M.

# Cervical Lymphadenopathy/ management

1ry care physician

- Identify the underlying cause and treat as appropriate
- Localized adenopathy
  - 3-4 weeks observation period for resolution
  - Refer to specialist for further studies and management

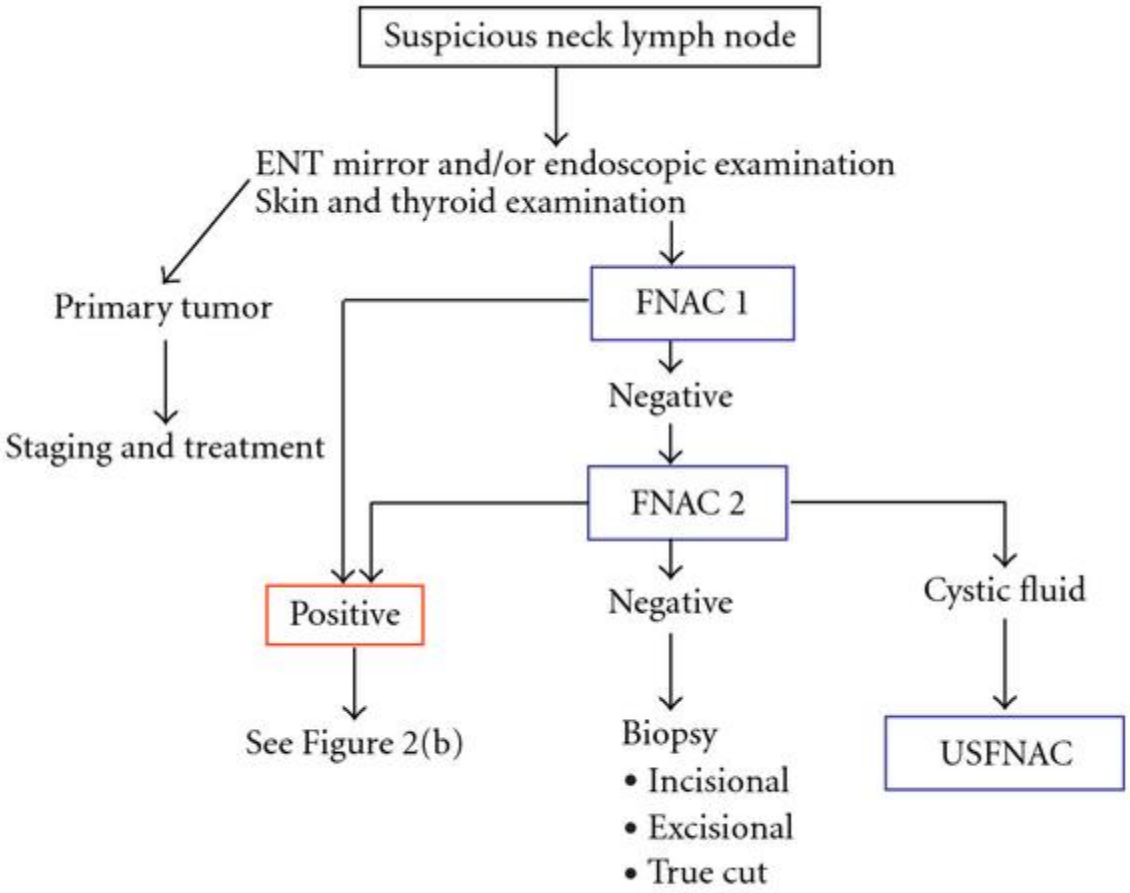
# Cervical Lymphadenopathy/ management

## Referral to specialist

- Routine referral (seen within 4–6 weeks)
  - for persistent isolated lymphadenopathy < 2 cm not improving after 4–6 weeks
- Early referral (seen within 2–3 weeks)
  - for lymphadenopathy > 2 cm, steady increase in size during observation, signs and symptoms suggestive of autoimmune disease
- Emergency referral
  - for toxic cervical lymphadenitis, or acute cervical lymphadenitis with no improvement 48–72 hours after starting oral antibiotic therapy
  - features of KD, associated persistent fever > 5 days, evidence of suppuration
  - signs and symptoms strongly suggestive of malignancy, chest radiography changes (e.g. mediastinal widening), or significant laboratory test abnormalities.

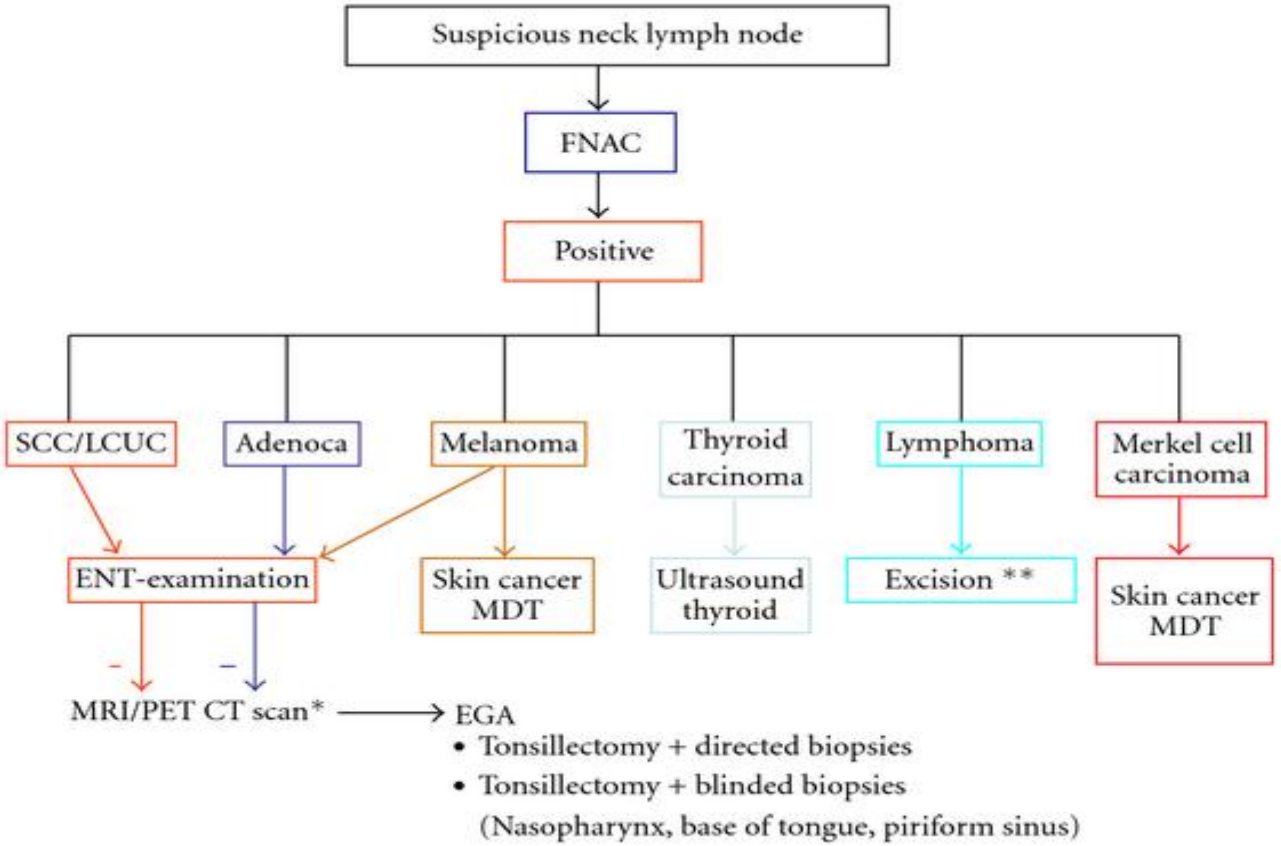
# Cervical Lymphadenopathy/ management

Fine needle aspiration cytology

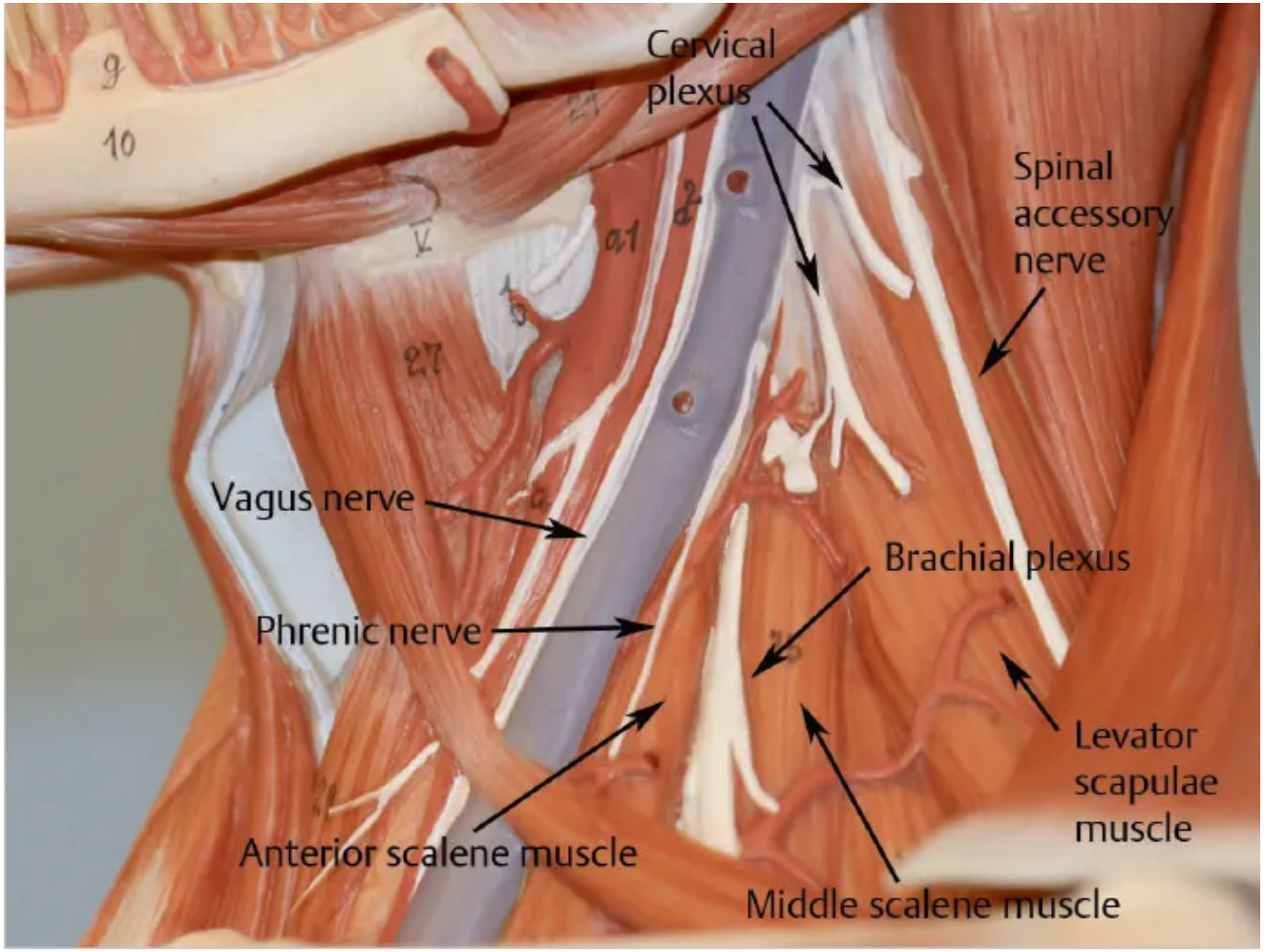


# Cervical Lymphadenopathy/ management

Fine needle aspiration cytology



# Cervical Lymphadenopathy/ Neck dissection




1906 – George Crile
described the classic radical
neck dissection (RND)


1967 – Bocca and Pignataro
described the "Functional neck dissection" (FND)