



# Cervical lymphadenopathy

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# Cervical lymphadenopathy

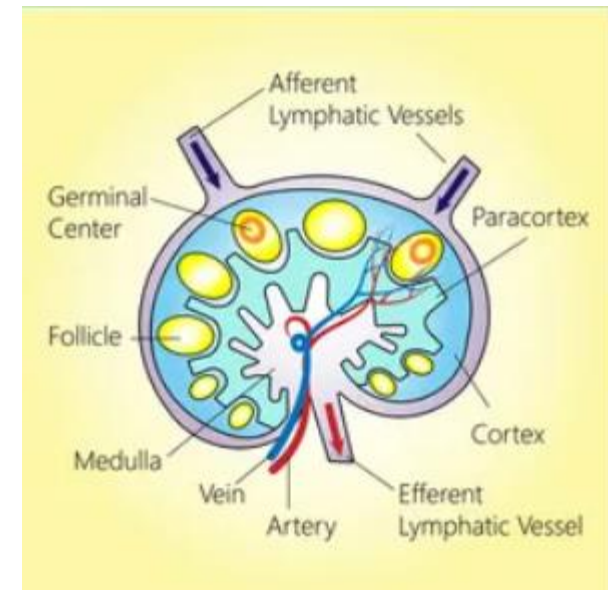


38–45% of otherwise healthy children have palpable lymph nodes. Larsson et al



# Anatomy & physiology

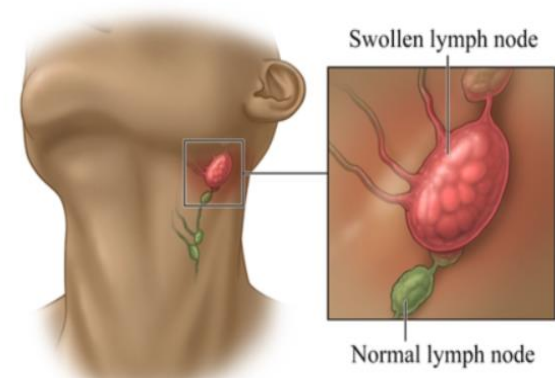
- To Sensitize the immune response
- To allow Contact between B-cells and T-cells
- To filter the lymph and remove MO and FB
- To return excess interstitial fluid to the blood
- To absorb fat- and fat-soluble vitamins





# 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 mets
- Infiltration by metabolite laden macrophages (lipid storage disease)

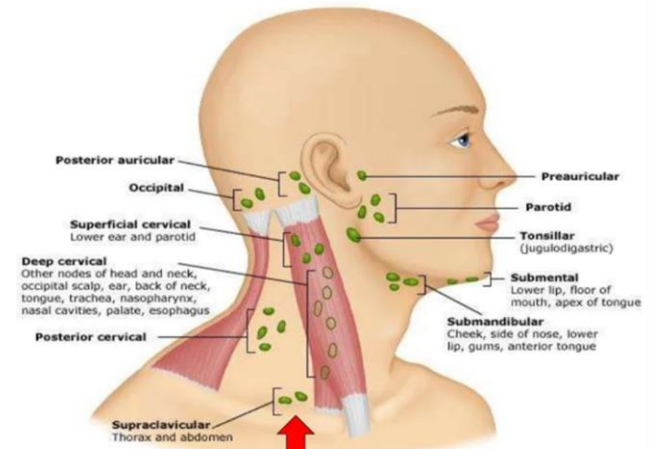






# Definition of Cervical lymphadenopathy

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

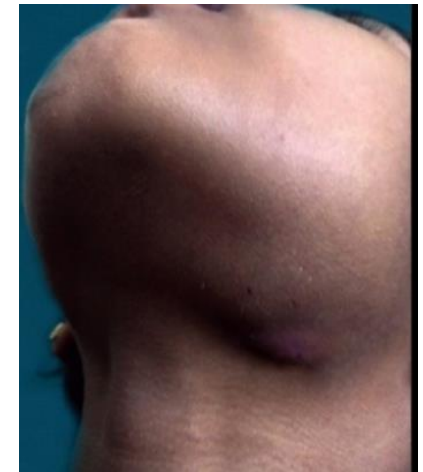




# Acute cervical lymphadenitis

## <2 weeks in duration/infection

- 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, <i>Staphylococcus aureus</i> , <i>Haemophilus influenzae</i>	Oral Augmentin 50 mg/kg/day Q12H OR oral cephalexin 50 mg/kg/day Q8H 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



# Subacute cervical lymphadenitis

2-6 weeks in duration

- Infections

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

Unilateral

- Immunologic

- SLE
- JIA
- Dermatomyositis

Bilateral, arthralgia, arthritis, rash



# Chronic cervical lymphadenitis

## >6weeks

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





# Risk factors for malignancy

- 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



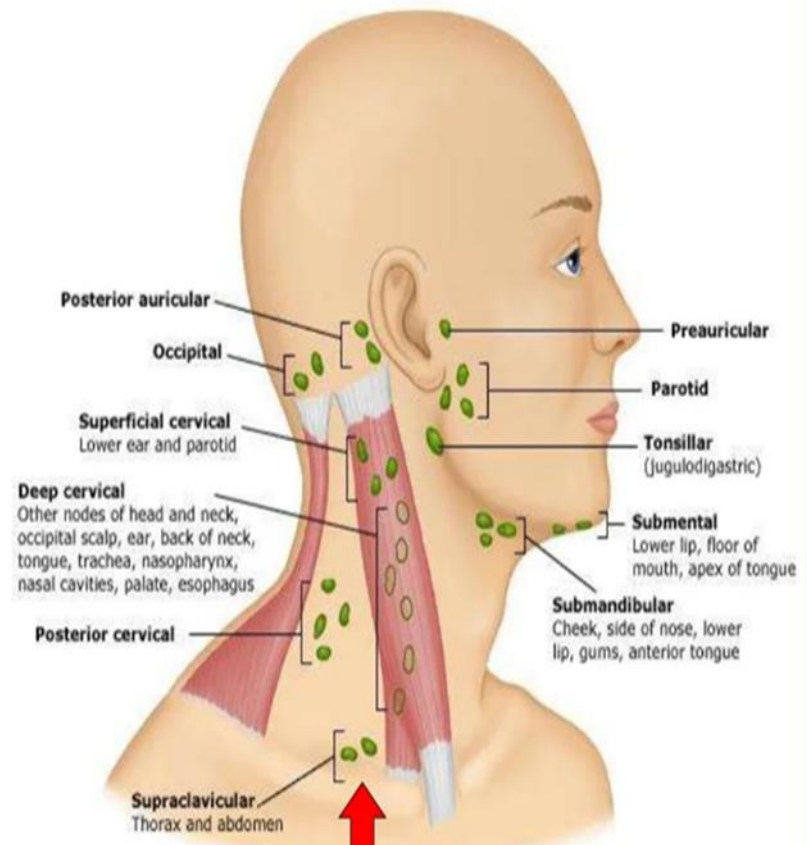
## Box 1. Red flags in cases of cervical lymphadenopathy:

- 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



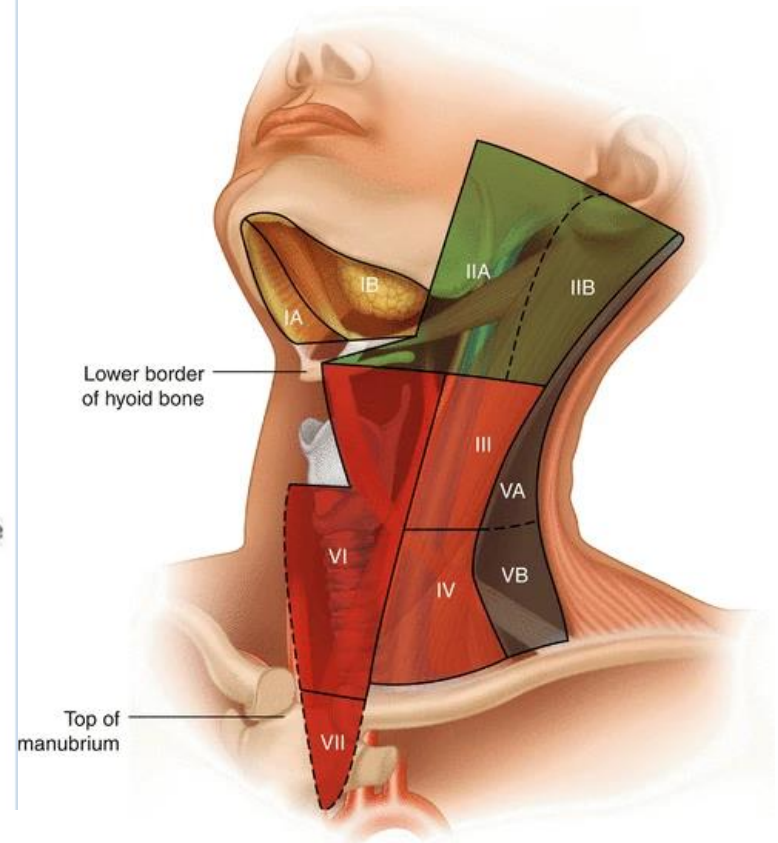
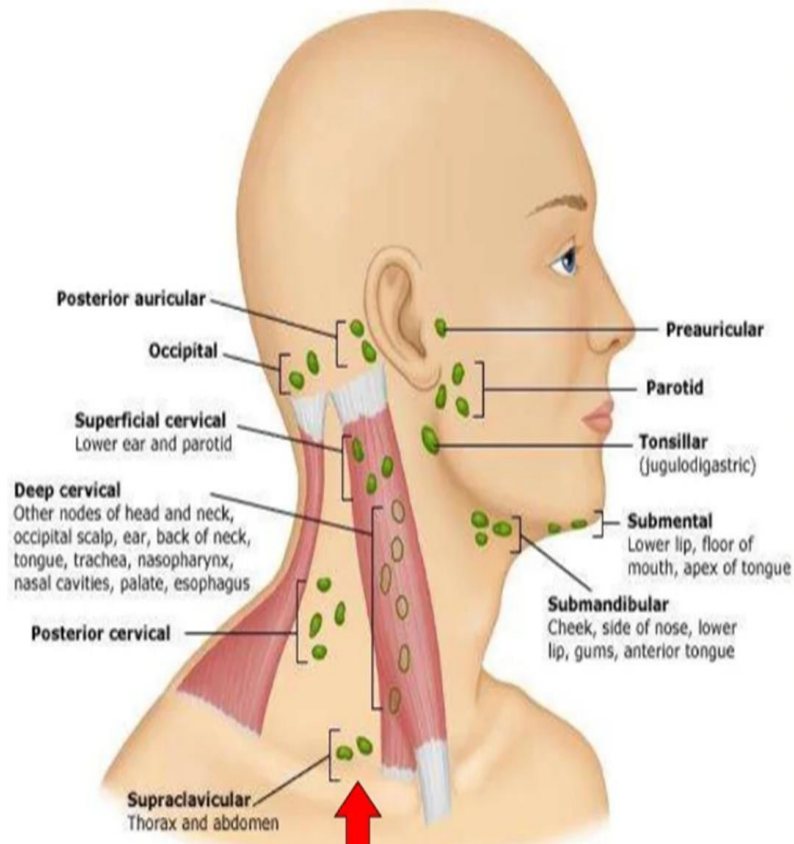
# Anatomical consideration

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





# Anatomical Considerations





# Neck mets

Summary of drainage areas for cervical lymph node groups.

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



# Clinical approach to CLA/History

- Site and duration
- Fever, systemic symptoms
- H&N complaints
- Dental complaints
- Infectious risk





# Clinical approach to CLA/Examination



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



# Clinical Approach to CLA/Investigation

## ● ROUTINE LABORATORY INVESTIGATIONS

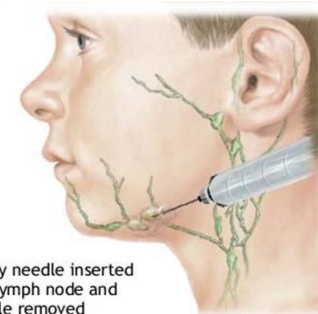
- COMPLETE HEMOGRAM AND PERIPHERAL SMEAR CANNOT BE OVEREMPHASIZED TO DIAGNOSE CLINICAL CONDITIONS LIKE MONONUCLEOSIS OR HEMATOLOGICAL MALIGNANCIES.

## ● 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

ADAM.



# Causes of lymph nodes MIAMI

Malignant

Infectious

autoimmune

miscellaneous

iatrogenic (due to  
medications).



# Management

1<sup>ry</sup> care physician

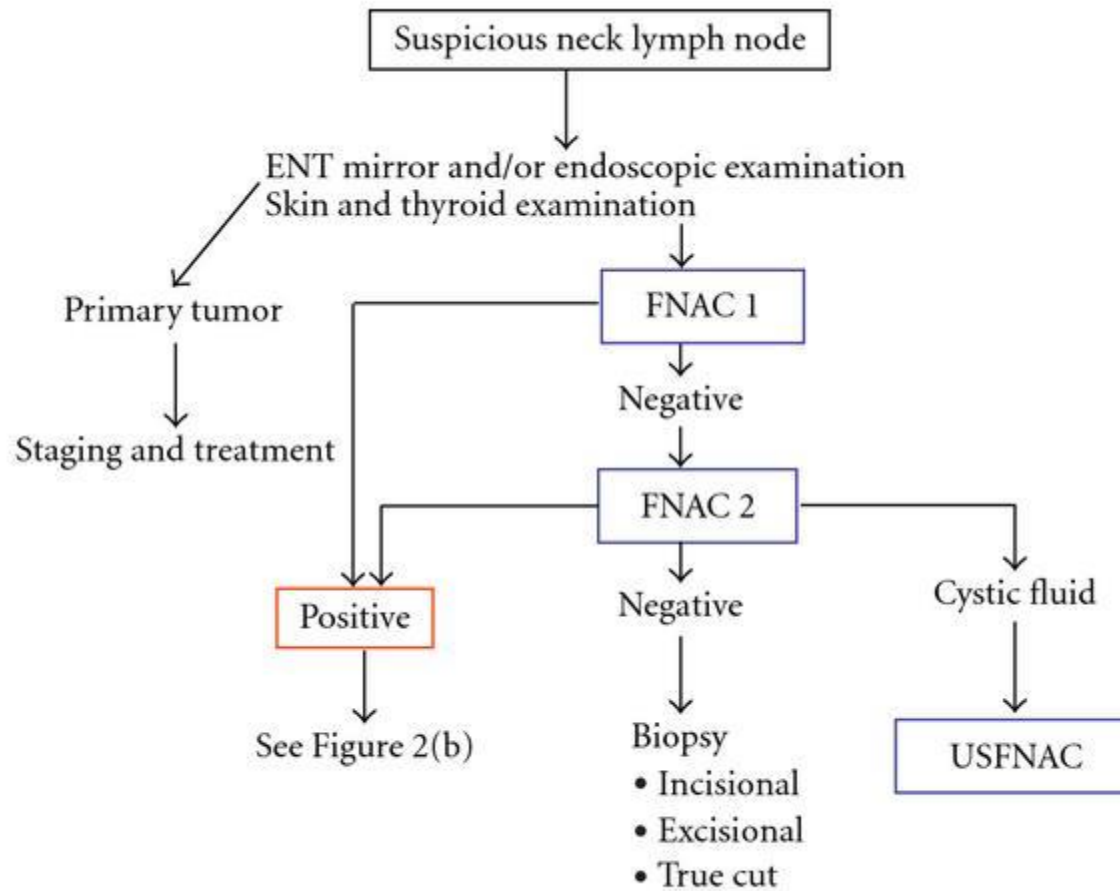
- Identify the underlying cause and treat as appropriate
- Localized adenopathy
  - 3-4 weeks observation period for resolution
  - Refer to specialist for further studies and management

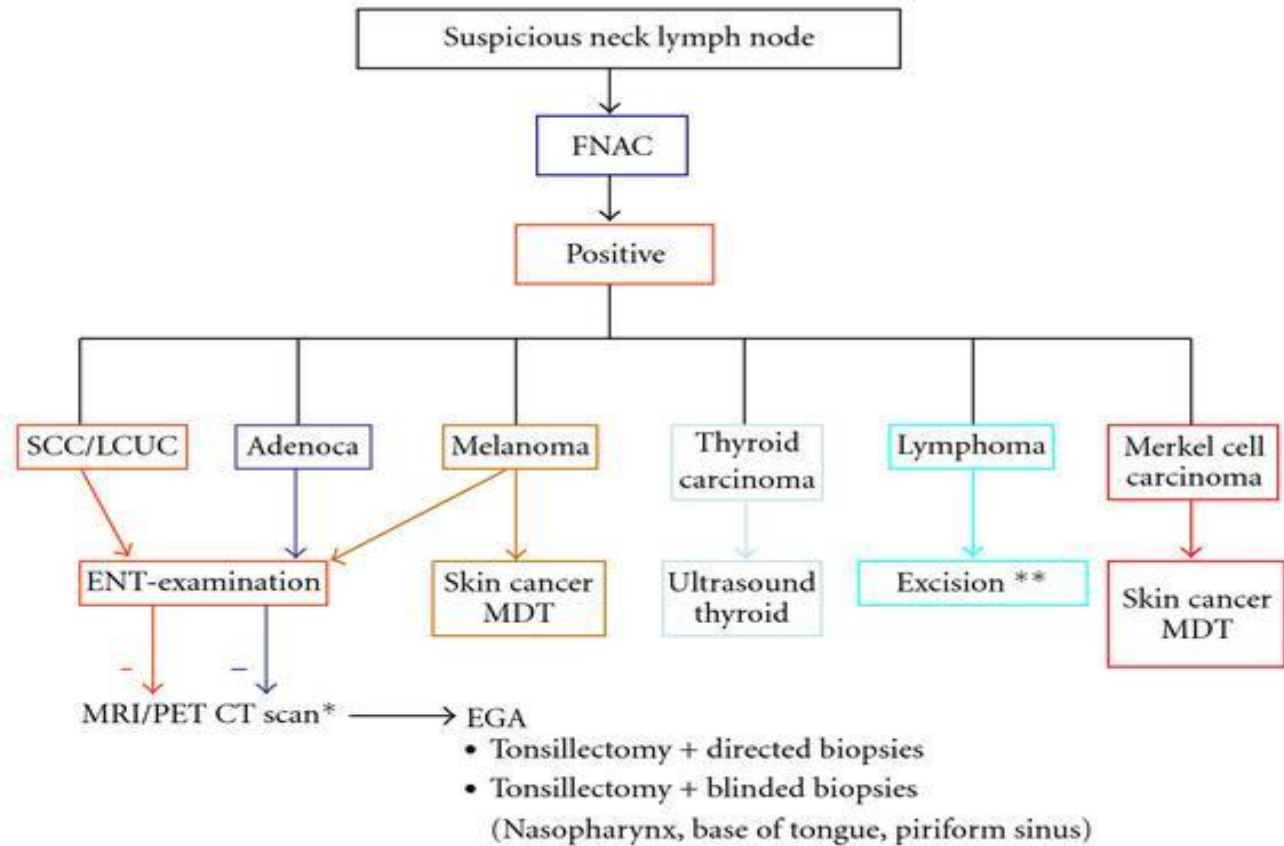


# When to refer to specialist?

- Routine referral (seen within 4–6 weeks) for persistent isolated lymphadenopathy < 2 cm not improving after 4–6 weeks with no other red flag features
- 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.







**Preauricular nodes:**

Drain scalp, skin

**Differential diagnosis:**

Scalp infections,  
mycobacterial infection

**Malignancies:**

Skin neoplasm, lymphomas,  
head and neck squamous  
cell carcinomas

**Posterior cervical nodes:**

Drain scalp, neck, upper  
thoracic skin

**Differential diagnosis:**

Same as preauricular nodes

**Supraclavicular nodes:**

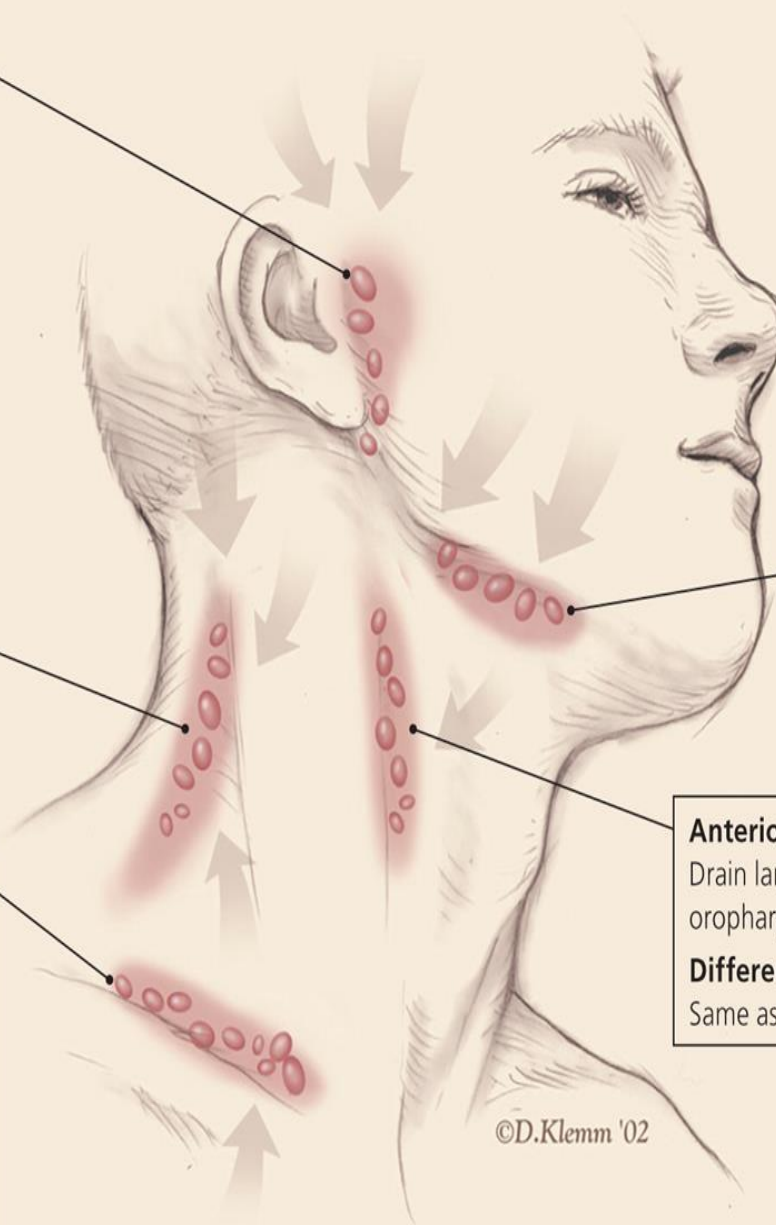
Drain gastrointestinal tract,  
genitourinary tract, pulmonary

**Differential diagnosis:**

Thyroid/laryngeal disease,  
mycobacterial/fungal infections

**Malignancies:**

Abdominal/thoracic

**Submandibular nodes:**

Drain oral cavity

**Differential diagnosis:**

Mononucleosis, upper  
respiratory infection,  
mycobacterial infection,  
toxoplasma, cytomegalovirus,  
dental disease, rubella

**Malignancies:**

Squamous cell carcinoma  
of the head and neck,  
lymphomas, leukemias

**Anterior cervical nodes:**

Drain larynx, tongue,  
oropharynx, anterior neck

**Differential diagnosis:**

Same as submandibular nodes

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