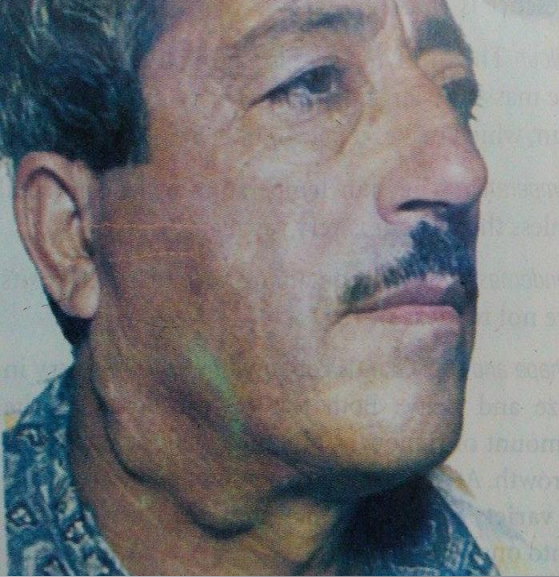


A large tuberculous 'collar-stud' abscess.
FIG 11.5 THE TUBERCULOUS ABSCESS.



Metastatic lymphadenopathy

- Occur in patients > 50 years
- Painless lump
- Grow slowly and new lumps may appear
- Symptoms of Primary lesion
 - In the head and neck: sore tongue; hoarse voice
 - In the chest: cough; haemoptysis
 - In the abdomen: dyspepsia; abdominal pain
 - Head and neck cancers do not cause anorexia or weight loss

Primary Reticulosis:

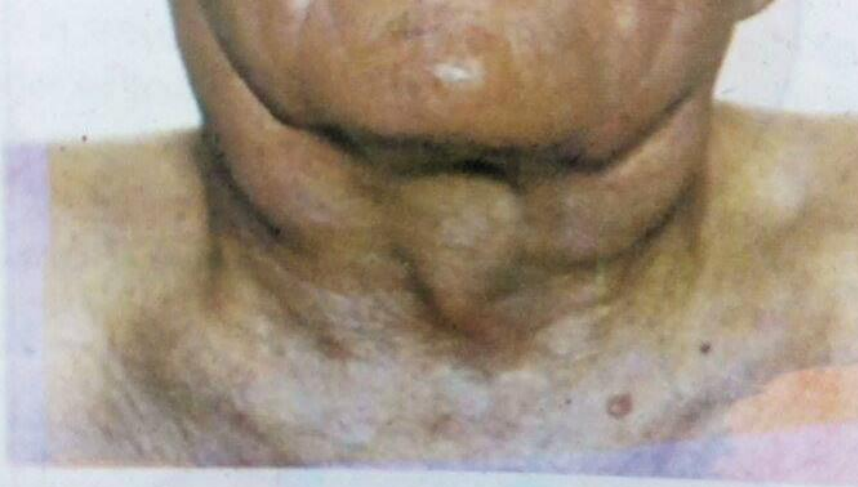
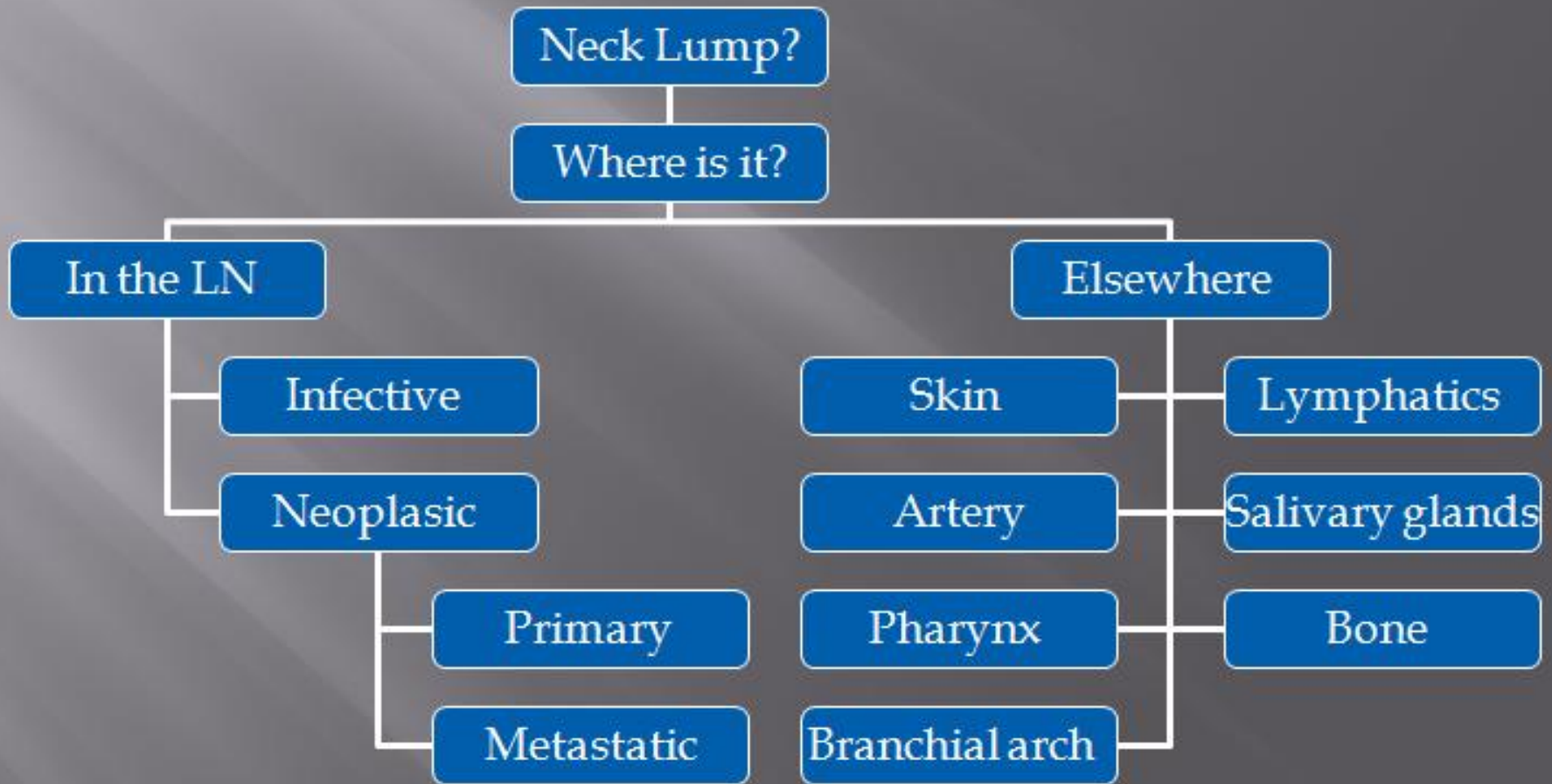


FIG 11.10 Bilateral cervical lymphadenopathy caused by Hodgkin's lymphoma.

- Common in children and young adults
- Painless lump which Grow slowly
- Systemic:
 - Malaise, weight loss and pallor
 - Itching of the skin (unexplained but distinct)
 - Periodic fever and rigors
 - Pains in bones
 - Venous congestion in the neck (large lymph gland mass occlude superior vena cava)

Differential Diagnosis



Differential Diagnosis

Skin

- Sebaceous cyst
- Lipoma

Artery

- Carotid body tumor
- Carotid art. aneurysm

Salivary glands

- Submand. Tumor
- Parotid Tumor

Lymphatics

- Cystic hygroma

Pharynx

- Pharyngeal pouch

Branchial arch remnant

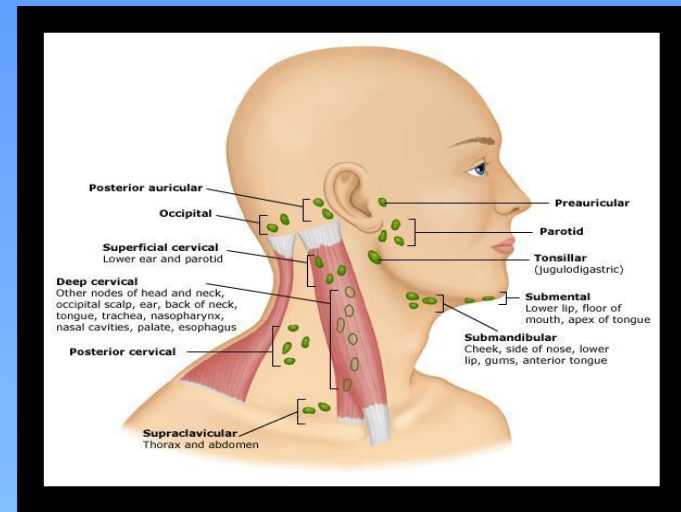
- Branchial cyst

Bone

- Cervical rib

When to worry?

- **Age**
- **Characteristics of the node**
- **Location of the node**
- **Clinical setting associated with lymphadenopathy**



Age

- Children/young adults – more likely to respond to minor stimuli with lymphoid hyperplasia
 - Lymph nodes in patients less than the age of 30 are clinically benign in 80% of cases whereas in patients over the age of 50 only 40% are benign
 - Biopsies done in patients less than 25 yrs have a incidence of malignancy of <20% vs the over-50 age group has an incidence of malignancy of 55-80%

Clinical examination

- Localized adenopathy should prompt a search for an adjacent precipitating lesion and an examination of other nodal areas to rule out generalized lymphadenopathy. In general, lymph nodes greater than 1 cm in diameter are considered to be abnormal. Supraclavicular nodes are the most worrisome for malignancy. A three- to four-week period of observation is prudent in patients with localized nodes and a benign clinical picture.

- The body has approximately 600 lymph nodes, but only those in the submandibular, axillary or inguinal regions may normally be palpable in healthy people.¹ Lymphadenopathy refers to nodes that are abnormal in either size, consistency or number. There are various classifications of lymphadenopathy, but a simple and clinically useful system is to classify lymphadenopathy as “generalized” if lymph nodes are enlarged in two or more noncontiguous areas or “localized” if only one area is involved.

- **First**, are there localizing symptoms or signs to suggest infection or neoplasm in a specific site?
- **Second**, are there constitutional symptoms such as fever, weight loss, fatigue or night sweats to suggest disorders such as tuberculosis, lymphoma, collagen vascular diseases, unrecognized infection or malignancy?
- **Third**, are there epidemiologic clues such as occupational exposures, recent travel or high-risk behaviors that suggest specific disorders?
- **Fourth**, is the patient taking a medication that may cause lymphadenopathy? Some medications are known to specifically cause lymphadenopathy (e.g., phenytoin [Dilantin]), while others, such as cephalosporins, penicillins or sulfonamides, are more likely to cause a serum sickness-like syndrome with fever, arthralgias and rash in addition to lymphadenopathy

Characteristics of the node

- Nodes lasting less than 2 weeks or more than one year with no progression of size have a low likelihood of being neoplastic.
- Cervical nodes – up to 56% of young adults have adenopathy on clinical exam

i. **Consistency – Hard/Firm vs Soft/Shotty; Fluctuant**

ii. **Mobile vs Fixed/Matted**

iii. **Tender vs Painless**

iv. **Clearly demarcated**

v. **Size**

i. **When to worry – 1.5-2cm in size**

ii. **Epitroclear nodes over 0.5cm; Inguinal over 1.5cm**

vi. **Duration and Rate of Growth**

vii. **Mobile vs fixed**

viii. **Symmetrical vs asymmetrical**

Consistency

- **Stony hard**: typical of cancer usually metastatic
- **Firm rubbery**: can suggest lymphoma
- **Soft**: infection or inflammation
- **Fluctuant** : Suppurated nodes.
- **Matting** : . A group of nodes that feels connected and seems to move as a unit is said to be “matted.” Nodes that are matted can be either
 - benign (e.g., tuberculosis, sarcoidosis or lymphogranuloma venereum)
 - or malignant (e.g., metastatic carcinoma or lymphomas).

Pain/Tenderness

- When a lymph node rapidly increases in size, its capsule stretches and causes pain. Pain is usually the result of an inflammatory process or suppuration, but pain may also result from hemorrhage into the necrotic center of a malignant node. The presence or absence of tenderness does not reliably differentiate benign from malignant nodes

Size

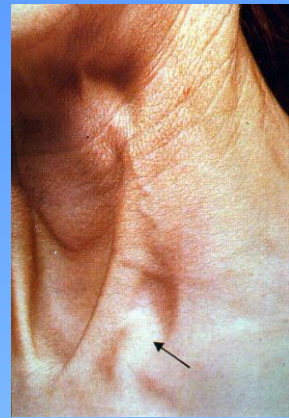
- in one series of 213 adults with unexplained lymphadenopathy,
 - no patient with a lymph node smaller than 1 cm^2 ($1 \text{ cm} \times 1 \text{ cm}$) had cancer,
 - while cancer was present in **8 percent** of those with nodes from 1 cm^2 to 2.25 cm^2 ($1 \text{ cm} \times 1 \text{ cm}$ to $1.5 \text{ cm} \times 1.5 \text{ cm}$) in size, and
 - in **38 percent** of those with nodes larger than 2.25 cm^2 ($1.5 \text{ cm} \times 1.5 \text{ cm}$).
- In children, lymph nodes larger than 2 cm in diameter (along with an abnormal chest radiograph and the absence of ear, nose and throat symptoms) were predictive of granulomatous diseases (i.e., tuberculosis, cat-scratch disease or sarcoidosis) or cancer (predominantly lymphomas).

Site

- The anatomic location of localized adenopathy will sometimes be helpful in narrowing the differential diagnosis. For example, **cat-scratch disease typically causes cervical or axillary adenopathy, infectious mononucleosis** causes cervical adenopathy and a number of **sexually transmitted diseases** are associated with inguinal adenopathy .

- **Supraclavicular lymphadenopathy**

- **Highest risk of malignancy** – estimated as **90%** in patients older than 40 years vs **25%** in those younger than 40 yrs
- **Right sided node** – cancer in mediastinum, lungs, esophagus
- **Left sided node (Virchow's)** → Abdominal malignancy (e.g testes, ovaries, kidneys, pancreas , stomach, gallbladder or prostate)



- Paraumbilical node (*Sister mary Joseph's*)

- Abdominal or pelvic neoplasm

- ***Location helps guide differential dx***

- *Lateral neck most common site for metastatic disease from UADT*
- *upper neck anterior/deep to SCM*
- *Midline neck masses likely related to thyroid, elevates with swallowing*

- ***Concerning features:***

- *any abnormality in other area of head and neck*
- *skin/scalp/ear lesions, mucosal lesion of nasal cavity, oral cavity, pharynx, larynx*
- *enlarging or hard mass*
- *fixation to surrounding structures (skin, SCM, mandible)*
- *single, asymmetric node/mass ~ > 2 cm*
- *mass in supraclavicular fossa or parotid*
- *neurologic abnormalities (cranial nerves)*
- *multiple rapidly growing nodes may suggest lymphoma*

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:

Abdominal/thoracic neoplasms, thyroid/laryngeal disease, mycobacterial/fungal infections

Submandibular nodes:

Drain oral cavity

Differential diagnosis:

Mononucleosis, upper respiratory viral/bacterial 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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Causes of localized lymphadenopathy

Various disorders can cause localized lymphadenopathy, but this sign usually results from infection or trauma affecting the specific area. Here are some common causes of lymphadenopathy, listed according to the area affected.

Occipital

- ◆ Infection
- ◆ Roseola
- ◆ Scalp infection
- ◆ Seborrheic dermatitis
- ◆ Tick bite
- ◆ Tinea capitis

Auricular

- ◆ Erysipelas
- ◆ Herpes zoster ophthalmicus
- ◆ Infection
- ◆ Rubella
- ◆ Squamous cell carcinoma
- ◆ Styes or chalazion
- ◆ Tularemia

Cervical

- ◆ Cat-scratch fever

- ◆ Facial or oral cancer
- ◆ Infection
- ◆ Mononucleosis
- ◆ Monocutaneous lymph node syndrome
- ◆ Rubella
- ◆ Rubeola
- ◆ Thyrotoxicosis
- ◆ Tonsillitis
- ◆ Tuberculosis
- ◆ Varicella

Submaxillary and submental

- ◆ Cystic fibrosis
- ◆ Dental infection
- ◆ Gingivitis
- ◆ Glossitis
- ◆ Infection

Supraclavicular

- ◆ Infection
- ◆ Neoplastic disease

Axillary

- ◆ Breast cancer
- ◆ Infection
- ◆ Lymphoma
- ◆ Mastitis

Inguinal and femoral

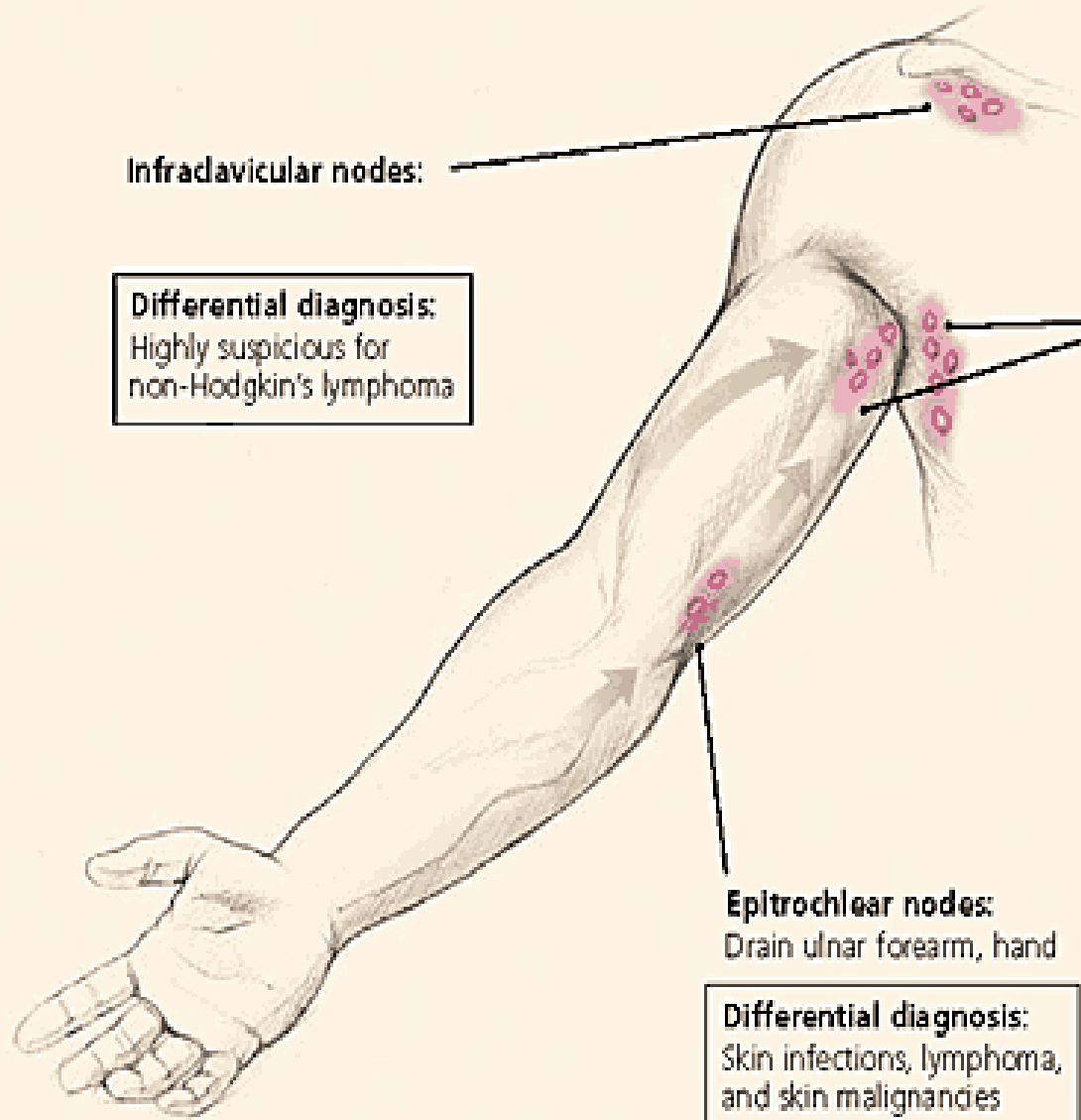
- ◆ Carcinoma
- ◆ Chancroid
- ◆ Infection
- ◆ Lymphogranuloma venereum
- ◆ Syphilis

Popliteal

- ◆ Infection

Cervical lymphadenopathy can be Part of Generalized Lymphadenopathy

- Malignancy – lymphoma, leukemia, Kaposi's sarcoma, metastases
- Autoimmune – SLE, RA, Sjogren's syndrome, Still's disease, Dermatomyositis
- Infectious – Brucellosis, Cat-scratch disease, CMV, HIV, EBV, Rubella, Tuberculosis, Tularemia, Typhoid Fever, Syphilis, viral hepatitis, Pharyngitis
- Other – Kawasaki's disease, sarcoidosis, amyloidosis, lipid storage diseases, hyperthyroidism, necrotizing lymphadenitis, histiocytosis X, Castleman's disease



Infraclavicular nodes:

Differential diagnosis:
Highly suspicious for
non-Hodgkin's lymphoma

Axillary nodes:

Drain breast, upper extremity,
thoracic wall

Differential diagnosis:

Skin infections/trauma,
cat-scratch disease, tularemia,
sporotrichosis, sarcoidosis,
syphilis, leprosy,
brucellosis, leishmaniasis

Malignancies:

Breast adenocarcinomas, skin
neoplasms, lymphomas,
leukemias, soft tissue/Kaposi's
sarcomas

Epitrochlear nodes:

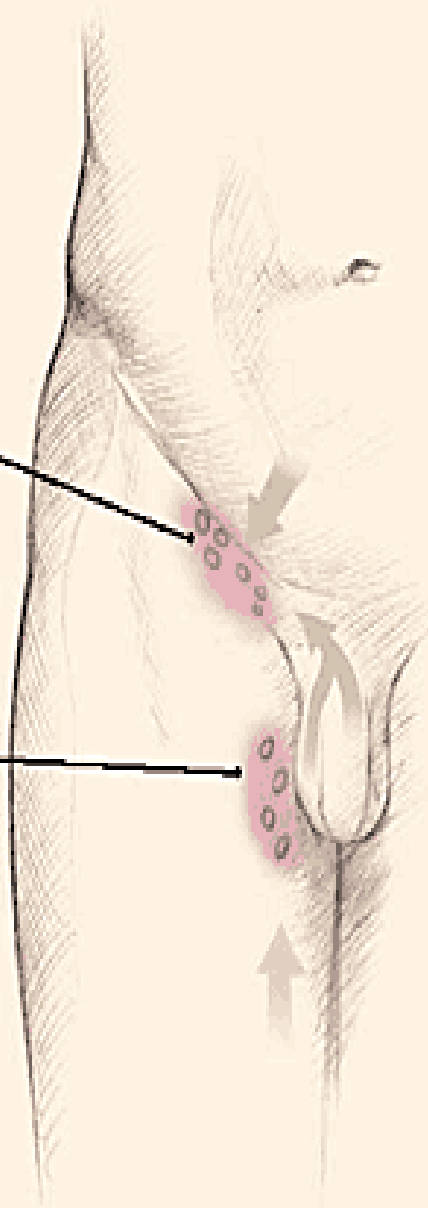
Drain ulnar forearm, hand

Differential diagnosis:
Skin infections, lymphoma,
and skin malignancies

Horizontal node group

Vertical node group

These groups drain lower abdomen, external genitalia (skin), anal canal, lower 1/3 of vagina, lower extremity



Differential diagnosis:

Benign reactive lymphadenopathy, sexually transmitted diseases, skin infections

Malignancies:

Lymphomas; squamous cell carcinoma of penis, vulva, and anus; skin neoplasms; soft tissue/Kaposi's sarcoma

Persistent generalized lymphadenopathy

- Enlargement of the lymph nodes that persists for **at least three months** in at least **two extrainguinal sites** is defined as persistent generalized lymphadenopathy and is common in patients in the **early stages of HIV infection**. Other causes of generalized lymphadenopathy in HIV-infected patients include Kaposi's sarcoma, cytomegalovirus infection, toxoplasmosis, tuberculosis, cryptococcosis, syphilis and lymphoma

Unexplained Generalized lymphadenopathy

- **Always requires an evaluation**
- Start with CXR and CBC
- Review Medications
- PPD (TB test), RPR(Rapid plasma reagin , a blood test for syphilis) , Hepatitis screen, ANA, HIV
- No yield on above test: Biopsy from most abnormal node.

Points in History

- **Identifiable cause for the lymphadenopathy?**
 - Localizing symptoms or signs to suggest infection/neoplasm/trauma at a particular site
 - URTI, pharyngitis, periodontal disease, conjunctivitis, insect bites, recent immunization etc
- **Constitutional symptoms** (fever, night sweats, weight loss, Fatigue, Pruritis)
- **Epidemiological clues**
 - Occupational exposures, recent travel, high-risk behaviour
- **Medications** – serum-sickness syndrome

Points in History

- **Symptoms** – fever, night sweats, weight loss, Fatigue, Pruritis
- Evidence of **other medical conditions** – connective tissue disease
- **Young patient** – suspect mononucleosis type of syndrome