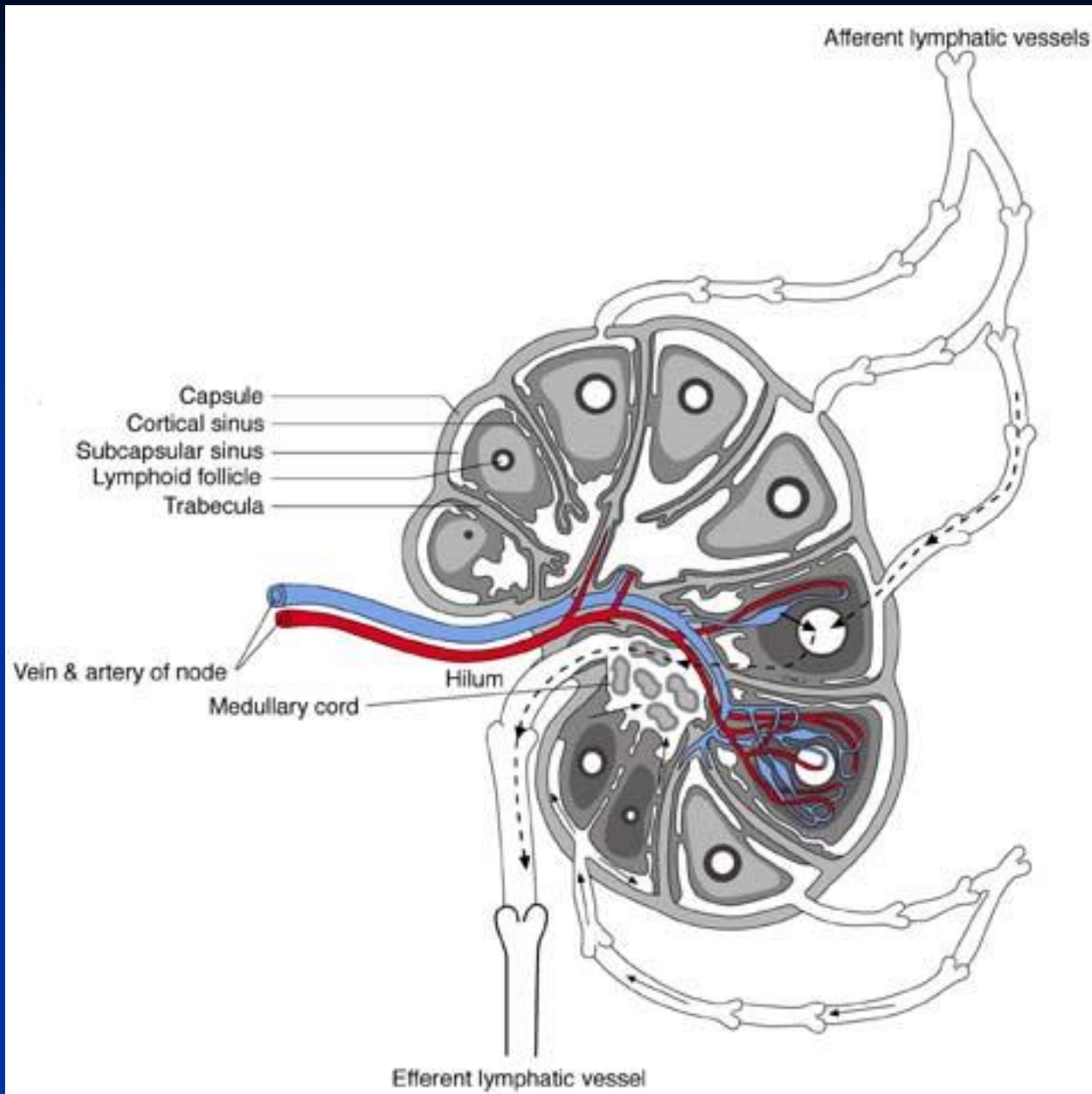


Objectives

- Approach to Adenopathy
 - Who to investigate
 - When to investigate
 - How to define risk for underlying malignancy



Lymph Nodes

■ Anatomy

- Collection of lymphoid cells attached to both vascular and lymphatic systems
- Over 600 lymph nodes in the body

■ Function

- To provide optimal sites for the concentration of free or cell-associated antigens and recirculating lymphocytes – “sensitization of the immune response”
- To allow contact between B-cells, T-cells and macrophages

■ Lymphadenopathy - node greater than 1cm in size

Why do lymph nodes enlarge?

- Increase in the number of benign lymphocytes and macrophages in response to antigens
- Infiltration of inflammatory cells in infection (lymphadenitis)
- In situ proliferation of malignant lymphocytes or macrophages
- Infiltration by metastatic malignant cells
- Infiltration of lymph nodes by metabolite laden macrophages (lipid storage diseases)

Epidemiology

- 0.6% annual incidence of unexplained adenopathy in the general population
- 10% were referred to a subspecialist and 3.2 % required a biopsy and 1.1% had a malignancy

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%





Characteristics of the node

- Nodes lasting less than 2 weeks or greater than one year with no progression of size have a low likelihood of being neoplastic – excludes low grade lymphoma
- Cervical nodes – up to 56% of young adults have adenopathy on clinical exam
- Inguinal adenopathy is common – up to 1-2 cm in size and often benign reactive nodes

Characteristics of the node

- Consistency – Hard/Firm vs Soft/Shotty; Fluctuant
- Mobile vs Fixed/Matted
- Tender vs Painless
- Clearly demarcated
- Size
 - When to worry – 1.5-2cm in size
 - Epitroclear nodes over 0.5cm; Inguinal over 1.5cm
- Duration and Rate of Growth

Location of the node

- 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) – testes, ovaries, kidneys, pancreas, stomach, gallbladder or prostate
- Paraumbilical node (Sister Joseph's)
 - Abdominal or pelvic neoplasm

Location of the node

- EpitrocLEAR nodes
 - Unlikely to be reactive
- Isolated inguinal adenopathy
 - Less likely to be associated with malignancy

Clinical Setting

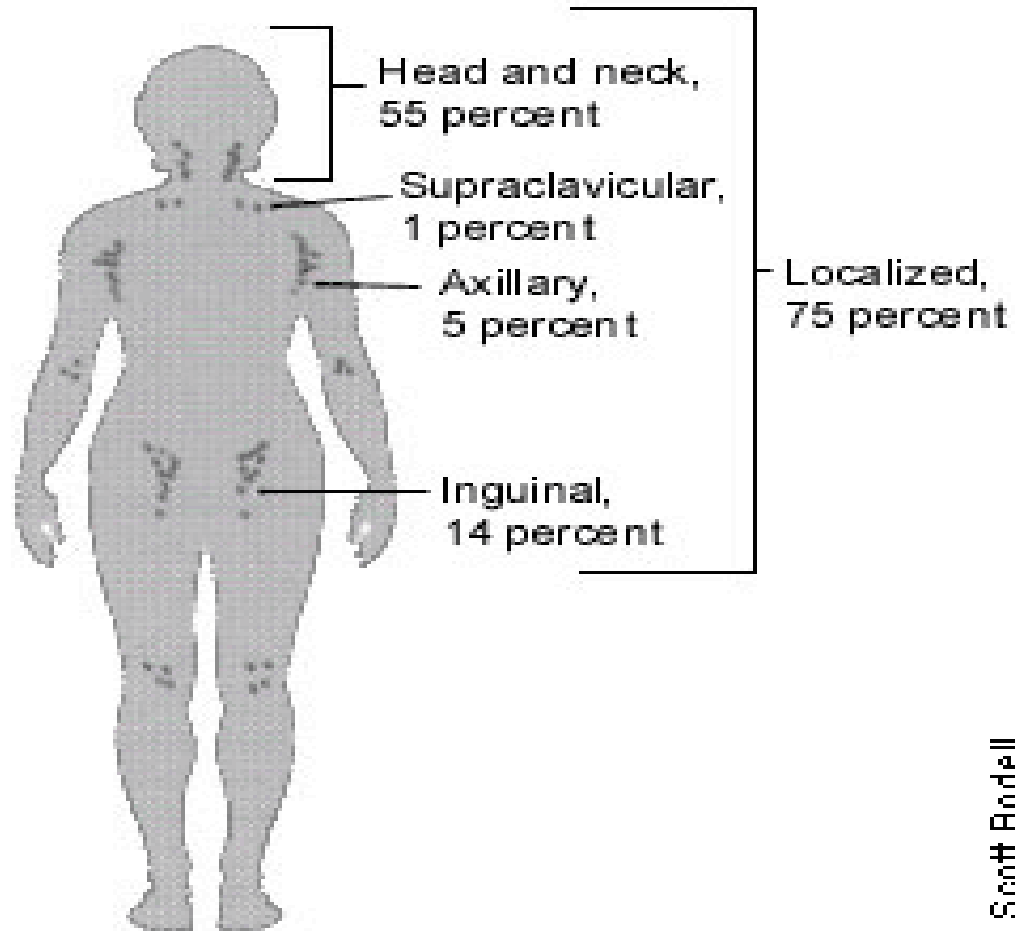
- B symptoms – fever, night sweats, weight loss
- Fatigue
- Pruritis
- Evidence of other medical conditions – connective tissue disease
- Young patient – mononucleosis type of syndrome

Physical Exam

- Full nodal examination – nodal characteristics
- Organomegaly
- Localized – examine area drained by the nodes for evidence of infection, skin lesions or tumours

Approach to Lymphadenopathy

- Localized – one area involved
- Generalized – two or more non-contiguous areas



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



Laboratory Investigation

CBC

Serology

CXR

CT and MRI

Ultrasound

Drugs

- Allopurinol
- Atenolol
- Captopril
- Carbamazepine
- Gold
- Hydralazine
- Penicillins
- Phenytoin
- Primidone
- Pyrimethamine
- Quinidine
- Trimethoprim/Sulfamethoxazole
- Sulfonamides

Management

- Identify underlying cause and treat as appropriate – confirmatory tests
- Generalized adenopathy – usually has identifiable cause
- Localized adenopathy
 - 3-4 week observation period for resolution if not high clinical suspicion for malignancy
 - Biopsy if risk for malignancy - excisional

Fine Needle Aspirate

- Convenient, less invasive, quicker turn-around time
- Most patients with a benign diagnosis on FNA biopsy do not undergo a surgical biopsy

Follow-up and Treatment

- Follow-up at 2-4 weeks interval for benign causes.
- Antibiotics are given only if there is strong evidence of bacterial infection.
- **DO NOT USE GLUCOCORTICOIDS-** might obscure diagnosis or delay healing in cases of infection (**EXCEPTION:** life-threatening pharyngeal obstruction by enlarged lymph tissue in Waldeyer's ring caused by IM.)

Conclusions

- Lymphadenopathy – initial presenting symptom
- Reactive vs Malignant
 - Probability
 - History
 - Physical Exam
- Biopsy if not resolved in 3-4 weeks for low risk patients
- Biopsy all high risk patients – excisional biopsy