

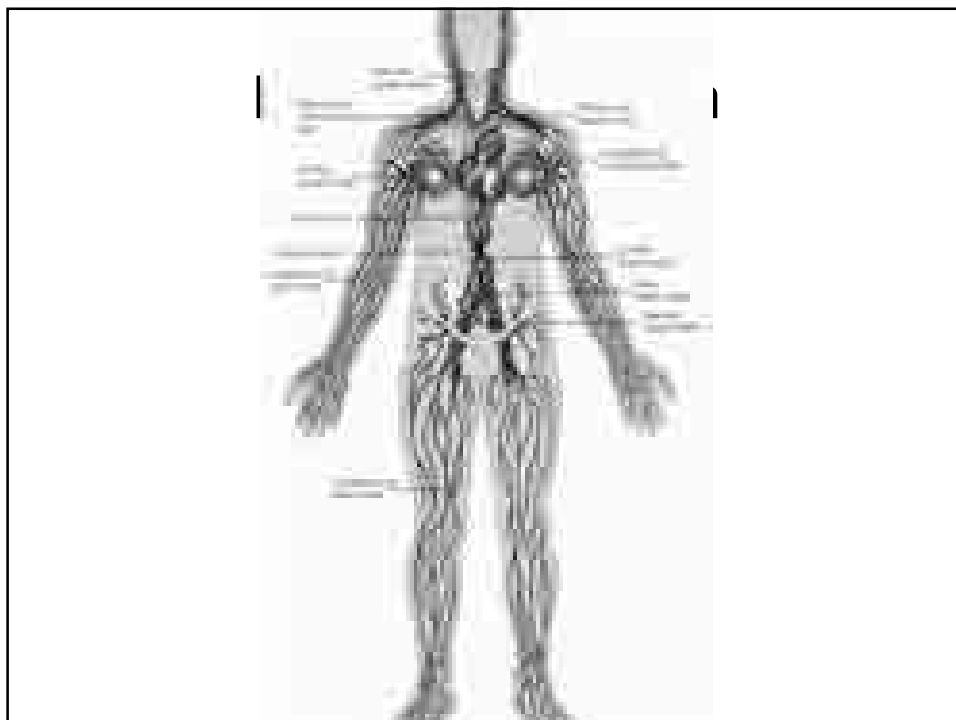
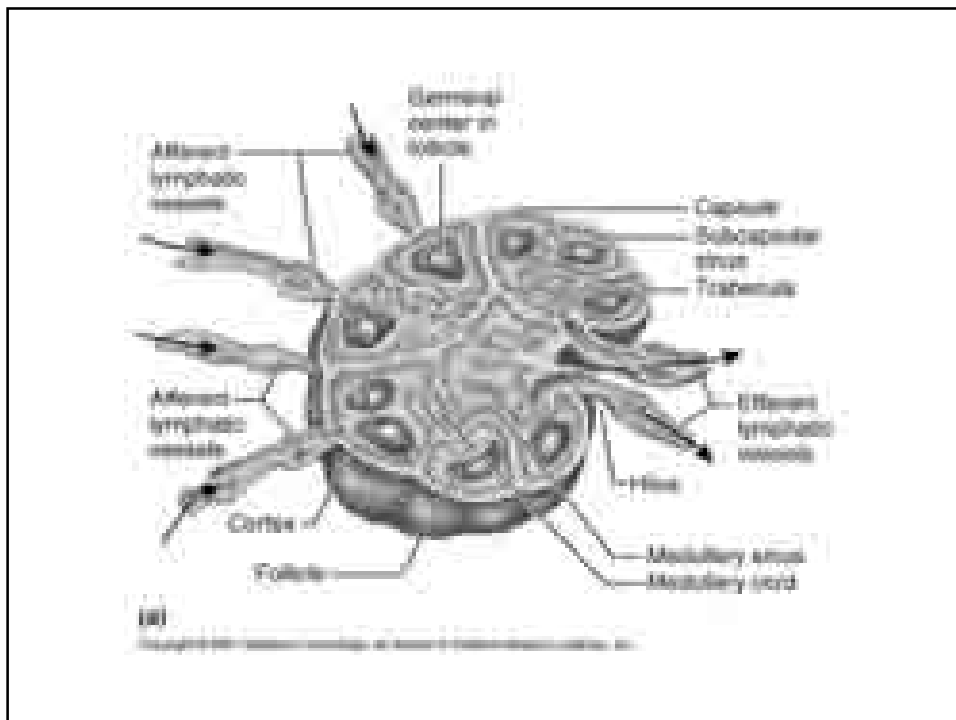


Lymph gland enlargement

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Definition

- **Lymphadenopathy** is a term meaning "disease of the lymph nodes." It is, however, almost synonymously used with "swollen/enlarged lymph nodes".
- When the infection is of the lymph nodes themselves, it is called **lymphadenitis**, but when the infection is of the lymph channels, it is called **lymphangitis**.



Introduction

- Although the finding of lymphadenopathy sometimes raises fears about serious illness, it is, in patients seen in primary care settings, usually a result of benign infectious causes.
- Most patients can be diagnosed on the basis of a careful history and physical examination

Introduction

- 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.

Introduction

- 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.
- Generalized adenopathy should always prompt further clinical investigation.
- When a node biopsy is indicated, excisional biopsy of the most abnormal node will best enable the pathologist to determine a diagnosis.

Supraclavicular LN



Causes

- The cause of lymphadenopathy is often obvious: for example, the child who presents with a sore throat, tender cervical nodes and a positive rapid strep test, or the patient who presents with an infection of the hand and axillary lymphadenopathy



- In other cases, the diagnosis is less clear.
- Lymphadenopathy may be the only clinical finding or one of several non-specific findings, and the discovery of swollen lymph nodes will often raise the specter of serious illness such as lymphoma, acquired immunodeficiency syndrome or metastatic cancer

- The physician's task is to efficiently differentiate the few patients with serious illness from the many with self-limited disease.

Medications That May Cause Lymphadenopathy

Allopurinol (Zyloprim)	Penicillin
Atenolol (Tenormin)	Phenytoin (Dilantin)
Captopril (Capozide)	Primidone (Mysoline)
Carbamazepine (Tegretol)	Pyrimethamine (Daraprim)
Cephalosporins	Quinidine
Gold	Sulfonamides
Hydralazine (Apresoline)	Sulindac (Clinoril)

Epidemiologic Clues to the Diagnosis of Lymphadenopathy

- Cat - Cat-scratch disease, toxoplasmosis
- Undercooked meat - Toxoplasmosis
- Tick bite - Lyme disease, tularemia
- Tuberculosis - Tuberculous adenitis
- Recent blood transfusion or transplant - Cytomegalovirus, HIV
- High-risk sexual behavior - cytomegalovirus, hepatitis B infection
HIV, endocarditis, hepatitis B infection
- Intravenous drug use

Unexplained lymphadenopathy

- In patients with unexplained localized lymphadenopathy and a reassuring clinical picture, a three- to four-week period of observation is appropriate before biopsy
- Patients with localized lymphadenopathy and a worrisome clinical picture or patients with generalized lymphadenopathy will need further diagnostic evaluation that often includes biopsy

History

- localizing symptoms or signs to suggest infection or neoplasm in a specific site
- 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

History

- epidemiologic clues such as occupational exposures, recent travel or high-risk behaviors that suggest specific disorders
- medication that may cause lymphadenopathy

Physical Examination

- Nodes are generally considered to be normal if they are up to 1 cm in diameter; however, some authors suggest that epitrochlear nodes larger than 0.5 cm or inguinal nodes larger than 1.5 cm should be considered abnormal.

Pain

- 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

Consistency.

- Stony-hard nodes are typically a sign of cancer, usually metastatic.
- Very firm, rubbery nodes suggest lymphoma. Softer nodes are the result of infections or inflammatory conditions.
- Suppurant nodes may be fluctuant.
- The term "shotty" refers to small nodes that feel like buckshot under the skin, as found in the cervical nodes of children with viral illnesses.

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).

Location

- 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

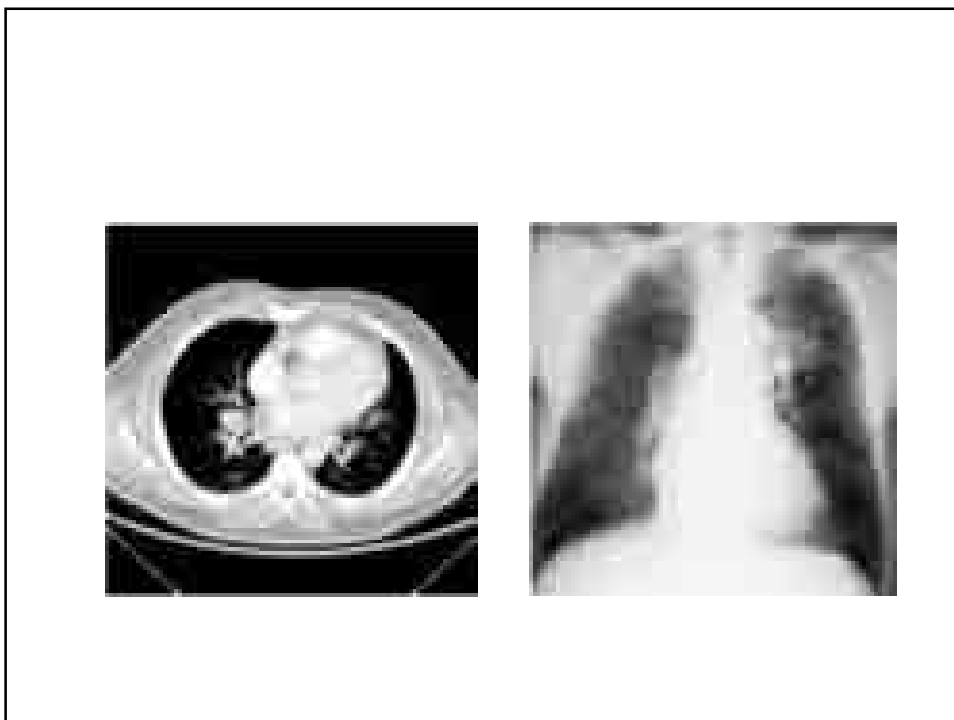
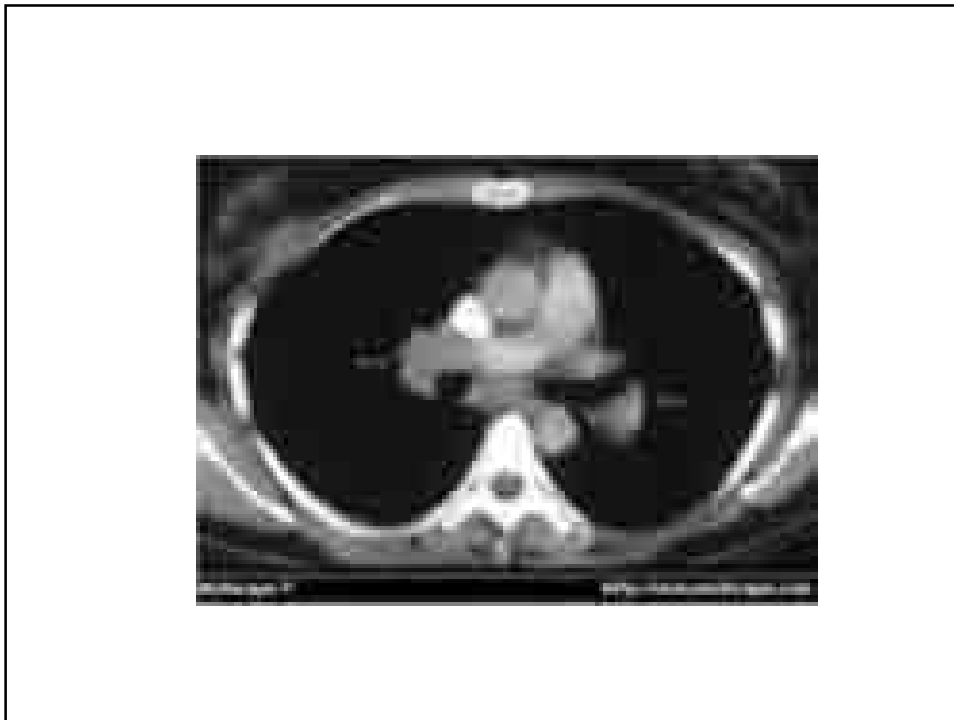
Diff diagnosis

- Mononucleosis-type syndromes: Fatigue, malaise, fever, atypical lymphocytosis
- Epstein-Barr virus: Splenomegaly in 50% of patients Monospot, IgM EA or VCA
- Toxoplasmosis: 80 to 90% of patients are asymptomatic IgM toxoplasma antibody
- Cytomegalovirus: Often mild symptoms; patients may have hepatitis IgM CMV antibody, viral culture of urine or blood
- Initial stages of HIV infection: "Flu-like" illness, rash HIV antibody

Common causes

- Cat-scratch disease Fever in one third of patients; cervical or axillary nodes Usually clinical criteria; biopsy if necessary
- Pharyngitis due to group A streptococcus, gonococcus Fever, pharyngeal exudates, cervical nodes Throat culture on appropriate medium
- Tuberculosis lymphadenitis: Painless, matted cervical nodes PPD, biopsy
- Secondary syphilis: Rash RPR





Diff diagnosis

- Rheumatoid arthritis: Arthritis Clinical criteria, rheumatoid factor
- Lymphoma: Fever, night sweats, weight loss in 20 to 30% of patients Biopsy
- Leukemia: Blood dyscrasias, bruising Blood smear, bone marrow
- Serum sickness: Fever, malaise, arthralgia, urticaria; exposure to antisera or medications
Clinical criteria, complement assays

Conclusion

- In most patients, lymphadenopathy has a readily diagnosable infectious cause. A diagnosis of less obvious causes can often be made after considering the patient's age, the duration of the lymphadenopathy and whether localizing signs or symptoms, constitutional signs or epidemiologic clues are present.

Conclusion

- When the cause of the lymphadenopathy remains unexplained, a three- to four-week observation period is appropriate when the clinical setting indicates a high probability of benign disease.