

Lymphadenopathy

by Kenneth Heym, M.D.

Enlarged lymph nodes are commonly found in children during sick and well visits. In most cases, the enlarged nodes will be of a benign etiology, but can be due to malignancy which will require prompt evaluation and intervention. Identifying which patients need referral and potential lymph node biopsy is challenging. As with most pediatric diagnoses, the best tools for gathering information are the history and physical examination, followed by select laboratory and imaging studies.

History

The majority of enlarged nodes in children will be secondary to infectious causes. A complete history should survey for characteristics of infectious diseases, including:

- **Environmental:** Sick contacts, animal exposures (cats, kittens), recent travel.
- **Other infectious symptoms:** Fever, pharyngitis, upper respiratory symptoms, lethargy.
- **Chronology of node enlargement:** Rapidly growing, painful nodes can be due to staphylococcal and streptococcal infection, as well as many viruses. Chronic, slow-growing, non-tender lymph nodes may be more likely to represent chronic, atypical infections or other systemic diseases, including malignancy.

It is crucial to determine any associated constitutional symptoms which may be indicative of infectious and non-infectious systemic diseases. These include fever, weight loss, night sweats, diffuse pain, malaise, fatigue and rash. A complete medication history is also essential as some medicines, such as phenytoin, can cause enlargement of peripheral lymph nodes.

Physical Examination

A complete lymph node exam will assess many important characteristics of the enlarged nodes and give clues to the etiology. These include:

- **Location:** It is necessary to determine if the lymphadenopathy is localized or generalized. For localized adenopathy, look for pathology in the area of drainage for those nodes, such as upper respiratory and ear infections causing cervical adenopathy. Most cervical, axillary and inguinal nodes will be benign; however, nodes in the supraclavicular and epitrochlear areas are associated with a higher incidence of malignancy.
- **Size:** Most normal lymph nodes are less than 1 to 1.5 cm in maximal diameter. Biopsy must be considered when nodes are greater than 2 cm.



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- **Consistency:** Fluctuant or rubbery mobile nodes are most often associated with infectious etiologies, although some firm nodes may represent chronic infection. Hard, matted and fixed nodes are more concerning and may warrant further evaluation.
- **Tenderness:** Infected or reactive nodes tend to be more painful, whereas malignant nodes are often fixed and non-tender.

In addition to a thorough node exam, a complete physical should look for other evidence of systemic disease, including hepatomegaly, splenomegaly, rashes or bruising.

Laboratory Studies and Imaging

Laboratory evaluation can be decided by the information gathered in the history and physical exam.

- **Initial infectious workup:** Titers for EBV, CMV and bartonella; blood culture
- **Systemic workup:** CBC, ESR, LDH, uric acid
- **Imaging:** Chest X-ray if concern for mediastinal mass; ultrasound of enlarged fluctuant nodes to look for abscess

Therapy

If the size of the nodes is not impressive and other symptoms are absent, the patient may be observed and re-examined in two weeks. Most patients will warrant a trial of oral antibiotics targeted to staph, strep, and anaerobes (augmentin or clindamycin) for 10 to 14 days. If the adenopathy persists, a PPD should be placed and lymph node biopsy considered.

Referral for prompt evaluation and possible up-front biopsy should be considered in the following cases:

- Symptoms of systemic disease (weight loss, night sweats)
- Supraclavicular or epitrochlear adenopathy
- Fixed, non-tender nodes without other symptoms

It is crucial that steroid therapy NOT be given in the absence of a diagnosis as this may significantly complicate the diagnosis and treatment of potential leukemia or lymphoma.

If you have questions about a child with lymphadenopathy or would like to refer a patient to our service, please do not hesitate to contact us.

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