Outpatient Cytopathology® center

TOPICS IN CLINICAL FNA

Aspiration Biopsy Cytology March 2007

LYMPHADENOPATHY

Lymphadenopathy is a common clinical problem. Patients occasionally present with a lump or bump somewhere it doesn't belong. When this happens, there are two questions to ask immediately, both of which can be quickly answered with a fine needle aspiration biopsy.

Is it really lymphadenopathy or is it something else? A mass thought to be due to an enlarged lymph node may in fact be due to a normal structure (e.g. salivary gland) or can be some other tissue mass (e.g. a lipoma, a knotted muscle, or an abscess).

The second question: If it is lymphadenopathy, is it benign or malignant? Reasons for lymphadenopathy can range widely—from an insignificant winter cold to life threatening illnesses. If the clinical history does not elicit a clear reason for a benign enlarged lymph node, or if the presumed lymph node does not respond as expected to treatment, then FNA biopsy of the mass should be considered.

FNA biopsy of presumed lymphadenopathy can reliably distinguish whether or not the mass is actually a lymph node. If it is true lymphadenopathy, FNA biopsy can determine if the enlargement is due to inflammation, metastatic malignancy or malignant lymphoma.

History and Physical Exam

Time course: How long has the lymphadenopathy been present? Has the lymph node(s) rapidly increased in size or has there been slow gradual growth? Reactive lymph nodes usually regress over 4-6 weeks. Rapid growth could indicate a high-grade lymphoma, whereas slower growth suggests a low-grade lesion.

History: Does the patient have an underlying disease process predisposing them to lymphadenopathy such as rheumatoid arthritis, lupus, infection, syphilis, AIDS, tuberculosis, or exposure to certain animals (birds, cats, wild animals)? Vaccinations and drugs such as phenytoin can also result in lymphadenopathy.

Systemic symptoms: Does the patient have fever, chills, weight loss, night sweats or pruritis?

Physical exam: Flat, discoid feeling nodes are usually benign. Spherical nodes >3 cm are very suspicious for malignancy. If a lymph node is hard, this is worrisome for metastatic disease, whereas soft lymph nodes could be reactive or due to lymphoma. Tenderness usually indicates the node is inflammatory. Fixed nodes favor metastasis and matted nodes lymphoma.

Children

The vast majority of lymphadenopathy in young patients is benign. Children can mount a florid immune response to infectious antigenic stimuli, including colds and the flu, resulting in markedly enlarged lymph nodes. However, children also suffer from malignant lymphomas. Thus, if a child presents with significant lymphadenopathy that does not show steady resolution with time, an FNA biopsy is indicated.

Lymphadenitis

Lymphadenitis means inflammation of the lymph node. The causative agent for the lymphadenitis can sometimes be determined, such as tuberculosis, but usually the pathologic findings are non-specific and the causative agent not identified. FNA biopsy can diagnose the adenopathy as reactive, granulomatous, suppurative or caseating. If indicated, lymphoid tissue can be obtained by FNA biopsy for bacterial, fungal and/or mycobacterial cultures.

Metastatic Disease

FNA biopsy is an excellent tool for detecting metastatic tumor in lymph nodes. This applies to patients who have

no known history of a malignancy as well as patients who have a history of a tumor and the physician is looking for recurrence of the neoplasm.

Aspirated cells can be used for immunohistochemical marker studies to help diagnose a tumor primary. The immunohistochemical studies are comparable to those used on surgical biopsies. Using this technology and evaluating the cytologic features of the cells, it is possible to differentiate metastatic squamous cell carcinoma from adenocarcinoma, sarcoma and melanoma.

Lymphoma

Malignant lymphoma can be diagnosed with high sensitivity and specificity. During the past 10 years, studies have shown that a multiparameter approach is very accurate for diagnosing lymphoma by FNA biopsy. That is, cytologic features of the lymphoid cells on microscopic examination are combined with results from ancillary studies such as immunophenotyping, ploidy analysis, cytogenetics and molecular studies.

Flow cytometry can determine cell surface markers. B-cell lymphomas comprise the vast majority of non-Hodgkin's lymphomas in the western world and flow cytometry is one of the most powerful and convenient means of establishing B-cell monoclonality and hence lymphoma. Most B-cell lymphomas also demonstrate one or more additional immunophenotypic abnormalities or aberrant markers, and based on the pattern of the markers, a particular lymphoma subtype is favored. The flow cytometry findings are correlated with the cytologic appearance of the cells and a diagnosis can usually be rendered. Some oncologists will treat lymphoma based on the above findings whereas other clinicians prefer to have tissue from a surgical biopsy analyzed to confirm the cytologic diagnosis. It is a matter of personal preference.

Appointments

For further information or to ask questions about a particular patient to determine if the patient is a good candidate for an FNA biopsy, or to schedule an appointment, call the Outpatient Cytopathology Center at 423-283-4734. Our staff will be happy to assist you.

Company Profile

OUTPATIENT CYTOPATHOLOGY CENTER (OCC) is an independent pathology practice that specializes in performing and interpreting fine needle aspiration biopsy specimens. OCC is accredited by the College of American Pathologists. The practice was established in 1991 in Johnson City, Tennessee. Patients may be referred for FNA biopsy of most palpable masses as well as for aspiration of non-palpable breast and thyroid masses that can be visualized by ultrasound. OCC is a participating provider with most insurance plans. Our primary referral area includes patients from Tennessee, Virginia, West Virginia, North Carolina, South Carolina, Kentucky and Georgia.

Dr. Rollins

SUSAN D. ROLLINS, M.D., F.I.A.C. is Board Certified by the American Board of Pathology in Cytopathology, and in Anatomic and Clinical Pathology. Additionally, in 1994 she was inducted as a Fellow in the International Academy of Cytology. She began her training under G. Barry Schumann, M.D. at the University of Utah School of Medicine, subsequently completed a fellowship in Cytopathology under Carlos Bedrossian, M.D. at St. Louis University School of Medicine, and has completed a fellowship in Clinical Cytopathology under Torsten Lowhagen, M.D. at the Karolinska Hospital in Stockholm, Sweden. The author of numerous articles in the field of cytopathology, Dr. Rollins also has served as a faculty member for cytopathology courses taught on a national level.

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