

ADASP Recommendations for Processing and Reporting of Lymph Node Specimens Submitted for Evaluation of Metastatic Disease

ADASP Committee

The Association of Directors of Anatomic and Surgical Pathology (ADASP) has published numerous documents with recommendations for reporting of Surgical Pathology specimens involving particular organ sites (for example, breast, pancreas, thyroid, etc.) However, the Association has not yet considered the generic question of dealing with lymph node specimens in which the intent is to search for and document the presence of metastatic disease. We are also unaware of guidelines for pathologists published by any other organization on this subject.

It is well known that different pathologists in different laboratories follow different protocols for the processing and examination of these specimens. There is also extensive literature (some of which is summarized on the References appended to the present report) on the likelihood of identifying metastases of varying sizes with different methods of preparation, as well as on the clinical significance of this identification, which varies not only from site to site but also from report to report on the same site. The Association has reviewed this literature as well as the personal experience of its own members to present a set of recommendations for lymph node biopsies, lymph node dissections, sentinel node biopsies, and lymph node fine needle aspiration (FNA) and core needle biopsies. It should be noted that these recommendations are intended specifically for lymph nodes being studied for metastatic neoplasms, and are not intended to apply to lymph nodes being evaluated for lymphoma, infections, and other disease processes. They are, however, formulated generically enough to apply regardless of whether the primary tumor is a carcinoma of the breast, carcinoma of the prostate, melanoma, or any other malignant, potentially metastasizing tumor.

A. Lymph Node Biopsies

1. In the presence of gross tumor in a biopsy of a single lymph node, one or several routine sections to demonstrate the tumor and its possible extranodal extension will suffice.
2. In the absence of gross tumor, the entire node should be submitted for microscopic examination, cut into 3 to 4 mm slices in the longitudinal or transverse plane. If the node is so small that it cannot be sliced in this manner, it may be submitted as one piece *in toto*. If the node is sliced, care should be taken to process different surfaces for microscopic examination. The Association recommends the examination of several levels of each slide, stained with hematoxylin and eosin (H&E) only.

B. Lymph Node Dissections

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1. Processing and Staining
 - a. As mentioned above, the principles presented here are generic, and may vary by site or by institution.
 - b. Lymph node dissections are best processed fresh, although other techniques (such as fixation in Bouin's solution) may be used.
 - c. No clearing of adipose tissue is necessary, although it may represent an institutional or individual preference.
 - d. Submit every node for microscopic examination.
 - e. Submit the entire nodes cut as described in Section A unless they contain grossly visible tumor, in which case fewer slices are required, or if they are grossly largely replaced by adipose tissue, in which case processing is optional.
 - f. Lymph node levels in a dissection specimen should be specified and submitted separately where clinically appropriate (for example, neck dissections, colectomy specimens).
 - g. The summary of sections in the Surgical Pathology report should include how many sections of how many nodes are submitted in each cassette. Different color inks may be used to distinguish different nodes submitted in a single cassette.
 - h. One H&E slide per cassette is recommended.
 - i. Immunohistochemistry and other specialized techniques may be used as part of a research study or for different diagnosis, but are not now considered mandatory.
2. Reporting
 - a. The number of lymph nodes positive for metastatic disease and the total number of lymph nodes examined microscopically should be reported, with specific levels mentioned when appropriate.
 - b. The size of the largest metastasis (measured on the slide) should be reported if clinically indicated.
 - c. The presence of extracapsular extension may be reported, depending upon the primary site and institutional preference.
 - d. If the only tumor seen is in extranodal vessels, this should be stated.
 - e. Deposits of tumor not associated with any structure recognizable as a lymph node should be separately designated.
 - f. In rare situations, the grading of nodal metastases may be important.
 - g. After preoperative chemotherapy and/or radiotherapy, notation of necrotic *versus* non-necrotic tumor is recommended.
- C. Sentinel Node Biopsy
 1. The adequacy of the sentinel node dissection depends upon the skill and experience of the surgeon. At the present time, clinical utility of this technique is still controversial. In many institutions, this is still considered an experimental procedure.
 2. Where this factor has been studied, the level of radiation associated with sentinel node biopsy has not been demonstrated to pose any danger to pathologists or histotechnologists from radioactivity. However, protocols should conform to institutional and state guidelines.
 3. Intraoperative examination, whether by frozen section or scrape/imprint cytology or both, is appropriate only in those clinical situations in which the results will influence immediate therapeutic management. Examination of the intraoperative specimen by other than routine (H&E) stains is experimental at the present time.
 4. The number of nodes received and their sizes should be noted in the gross description of the report. Each node should be processed grossly as mentioned earlier under Dissections. If any portion of the sentinel node(s) is not submitted for routine sectioning, this should be specified.
 5. ADASP recommends that more than one section be performed on each block in these cases, if the node or nodes are not positive grossly or at intraoperative pathologic consultation. However, it is not currently clear how many sections (and from what levels of the block) are optimal. It is also unclear whether immunostains add clinically relevant information and whether they may be substituted for additional H&E-stained sections. It should be remembered that false positive immunos-

tains occur, and these stains should be interpreted in the context of standard histopathology.

6. If metastases are identified only by immunostains, this should be stated in the final report. Other statements on reporting provided in Section B (2) of this document are also applicable.

D. Fine Needle Aspiration and Core Needle Biopsy

1. A negative result for tumor does not definitely exclude the presence of a metastatic tumor. Results should be correlated with the clinical situation.
2. If only FNA is performed, a cell block may be useful for special studies in positive cases.
3. If only a core needle biopsy is performed, all tissue should be submitted. The number of cores received should be specified in the gross description, and should be correlated with the slides received and examined.
4. In many cases, it may not be possible to document on an FNA or core needle biopsy specimen that a metastatic tumor is indeed within a lymph node. In such a situation, a comment should be made to that effect. (1–10) (11–20) (21–30) (31–36)

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