Breast Cancer and Axillary Lymph Nodes

Lymph nodes help protect the body against infection and serve to filter foreign bodies from the lymphatic system.

Lymph is a clear fluid surrounding cells in the body that drains through lymphatic channels into lymph nodes. When an infection is present, lymph nodes detect it and help launch a series of events to fight the infection. Cancer cells may break away from the main tumor and circulate through the lymphatic system or through blood vessels. When some types of cancer cells lodge in the lymph nodes, cancer grows. When treating some cancers, it is important to know whether lymph nodes contain cancer cells to determine whether cancer may have spread throughout the body.

Breast cancer frequently spreads to the axillary (armpit) lymph nodes. Traditionally, when breast cancers were removed, an operation known as axillary lymph node dissection was performed to remove most of the lymph nodes in the armpit. Because lymph node dissection can cause problems like pain and arm swelling, it is best to avoid the operation if possible.

Sentinel Lymph Node Biopsy

Sentinel lymph node biopsy is an operation devised to reduce the need for axillary lymph node dissection. If no cancer is found in the axillary lymph nodes, patients do not require dissection.

A study published in JAMA 2 years ago showed that women with relatively small breast cancers and no obvious cancer that could be felt in the axillary nodes by the surgeon but who had a complete axillary lymph node dissection did not have a better chance at survival than women whose lymph nodes were not removed (JAMA. 2011;305(6):569-575. doi:10.1001/jama.2011.90). Almost all these women received radiation therapy to their breast and most received chemotherapy, hormonal therapy, or both. This study showed that many women with small amounts of tumor in the sentinel nodes do not need full removal of their axillary lymph nodes. (See Sugerman DT. JAMA Patient Page. Chemotherapy. JAMA. 2013;310(2):218.)

In this week’s JAMA, a study reported on the reliability of sentinel node lymph node surgery for women who start out with larger cancers and have cancer found in their lymph nodes when they receive chemotherapy treatment before undergoing surgery. After receiving chemotherapy, the breast cancer was removed. For 40% of the women in the study, chemotherapy cleared the cancer in the axillary lymph nodes. Furthermore, the study showed that for women who still had cancer in their axillary nodes after chemotherapy, the sentinel node procedure could not always identify cancer in the axilla. Women whose breast cancer has traveled to their axillary lymph nodes and have received chemotherapy may benefit by undergoing a complete axillary lymph node dissection when their breast cancer is surgically removed, although this has more adverse effects. Future studies may help clarify which such patients would be best suited for sentinel lymph node surgery.

To enroll in cancer clinical trials, visit http://www.cancer.gov/clinicaltrials/search/treatment-trial-guide or call the National Cancer Institute at 1-800-4-CANCER.

FOR MORE INFORMATION

- American Cancer Society
  www.cancer.org
- National Cancer Institute
  www.cancer.gov/cancertopics/pdq/treatment/breast/Patient

To find this and previous JAMA Patient Pages, go to the Patient Page link on JAMA’s website at jama.com. Many are published in English and Spanish.