

distant organ (such as the liver or lung) or set of lymph nodes.

10. Stage IVB

Any T, Any N, M1b: The cancer may or may not have grown through the wall of the colon or rectum, and it may or may not have spread to nearby lymph nodes. It has spread to more than one distant organ (such as the liver or lung) or set of lymph nodes, or it has spread to distant parts of the peritoneum (the lining of the abdominal cavity).

c. Breast Cancer

The following provides the example of TNM staging of breast cancer. Breast cancer takes a number of forms, as outlined below (39).

d. Breast Cancer In Situ (DCIS and LCIS)

Many breast cancers detected early, typically by mammography, are classified as breast cancer in situ. Two types of breast cancer in situ are: (1) ductal carcinoma in situ (DCIS) and (2) lobular carcinoma in situ (LCIS), as outlined below. Raju et al. (40) provide color photographs comparing the histology of DCIS and LCIS. Sullivan et al. (41) highlight the importance of a correct interpretation of the

histology, as the two types of cancer are subject to different types of treatment. DCIS can be managed with surgery plus radiation, while LCIS, which tends to resist radiation, is treated with methods other than radiation.

- *DCIS.* DCIS means that abnormal cells are found only in the lining of a milk duct of the breast. These abnormal cells have not spread outside the duct. There are several types of DCIS. If not removed, some may change over time and become invasive cancers, while others may not. DCIS is the fourth most common form of cancer in women in the United States (42). Although DCIS is a noninvasive or preinvasive lesion characterized by cancerous ductal cells confined to the duct lumen, if surgery alone is used to remove cancerous tissue, about 12% of patients experience a recurrence within 5 years (43). Hence, the preferred treatment is surgery in combination with radiation or chemotherapy.
- *LCIS.* LCIS means that abnormal cells are found in the lining of a milk lobule. Although LCIS is not considered to be actual breast cancer at this noninvasive stage, it is a warning sign of an increased risk of developing invasive cancer. LCIS is sometimes found in a biopsy for another lump or unusual change detected on a mammogram.

³⁹http://www.ucsfhealth.org/adult/medical_services/cancer/breast/conditions/breastcancer/signs.html; May 8, 2007; University of California at San Francisco).

⁴⁰Raju U, Mei L, Seema S, Hina Q, Wolman SR, Worsham MJ. Molecular classification of breast carcinoma in situ. *Curr. Genom.* 2006;7:523–32.

⁴¹Sullivan ME, Khan SA, Sullu Y, Schiller C, Susnik B. Lobular carcinoma in situ variants in breast cores: potential for misdiagnosis, upgrade rates at surgical excision, and practical implications. *Arch. Pathol. Lab. Med.* 2010;134:1024–8.

⁴²Kuerer HM, Albarracin CT, Yang WT, et al. Ductal carcinoma in situ: state of the science and roadmap to advance the field. *J. Clin. Oncol.* 2009; 27:279–88.

⁴³Wong JS, Kaelin CM, Troyan SL, et al. Prospective study of wide excision alone for ductal carcinoma in situ of the breast. *J. Clin. Oncol.* 2006;24:1031–6.