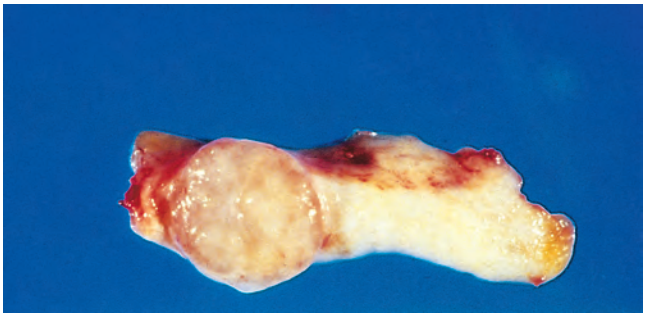

Figure 7-11 Fibroadenoma of the breast. The tan-colored, encapsulated small tumor is sharply demarcated from the whiter breast tissue.

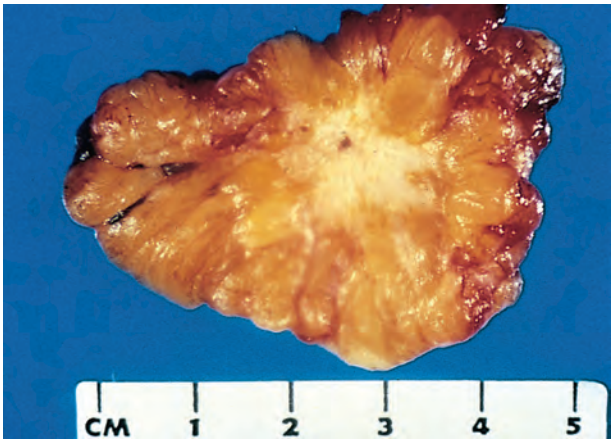

Figure 7-13 Cut section of an invasive ductal carcinoma of the breast. The lesion is retracted, infiltrating the surrounding breast substance, and would be stony hard on palpation. (Courtesy Dr. Trace Worrell, University of Texas Southwestern Medical School, Dallas, Texas.)

necessary to remove a considerable margin of apparently normal tissues adjacent to the infiltrative neoplasm in order to ensure complete local excision. As noted earlier, some cancers seem to evolve from a preinvasive stage referred to as *carcinoma in situ*. This commonly occurs in carcinomas of the skin, breast, and certain other sites and is best illustrated by carcinoma of the uterine cervix (Chapter 21). In situ epithelial cancers display the cytologic features of malignancy without invasion of the basement membrane. They may be considered one step removed from invasive cancer; with time, most penetrate the basement membrane and invade the subepithelial stroma.

Metastasis

Metastasis is defined by the spread of a tumor to sites that are physically discontinuous with the primary tumor, and unequivocally marks a tumor as malignant, as by definition benign neoplasms do not metastasize. The invasiveness of cancers permits them to penetrate into blood vessels, lymphatics, and body cavities, providing the opportunity for spread. All malignant tumors can metastasize, but some do so very infrequently. Examples include malignant neoplasms of the glial cells in the central nervous system, called *gliomas*, and basal cell carcinomas of the skin. Both of these cancers invade early in their course, but rarely metastasize. It is evident then that the properties of invasion and metastasis are separable.

In general, the likelihood of a primary tumor metastasizing correlates with lack of differentiation, aggressive local invasion, rapid growth, and large size. There are innumerable exceptions, however. Small, well-differentiated, slowly growing lesions sometimes metastasize widely; conversely, some rapidly growing, large lesions remain localized for years. Many factors relating to both invader and host are involved.

Approximately 30% of newly diagnosed solid tumors (excluding skin cancers other than melanomas) present with metastases. Metastatic spread strongly reduces the possibility of cure; hence, short of prevention of cancer, no achievement would be of greater benefit to patients than an effective means to block metastasis, with the important caveat that many tumors destined to kill the patient have already spread at the time of initial diagnosis. Blood cancers (the leukemias and lymphomas, sometimes called

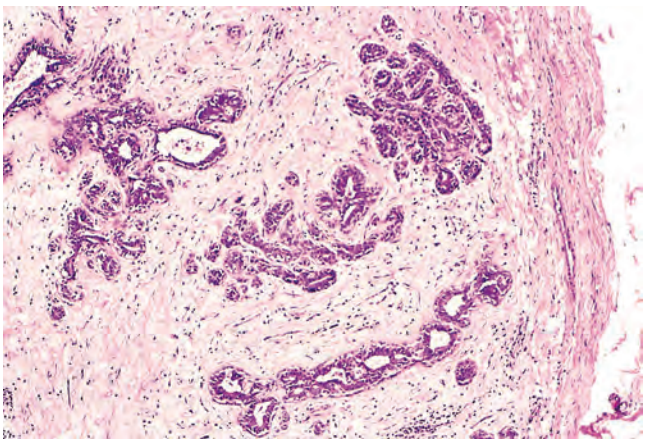

Figure 7-12 Microscopic view of fibroadenoma of the breast seen in Figure 7-11. The fibrous capsule *(right)* delimits the tumor from the surrounding tissue. (Courtesy Dr. Trace Worrell, University of Texas Southwestern Medical School, Dallas, Texas.)

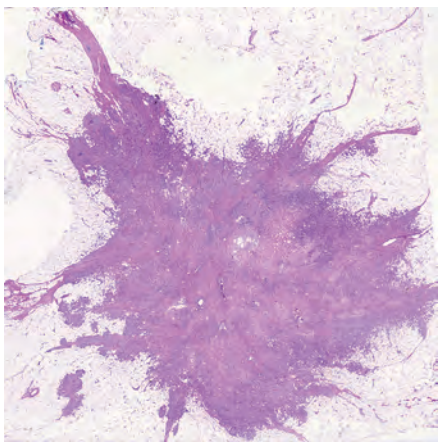

Figure 7-14 Low power microscopic view of invasive breast cancer. Note the irregular infiltrative borders without a well-defined capsule and intense stromal reaction. (Courtesy Dr. Susan Lester, Brigham and Women's Hospital, Boston, Mass.)

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