

KEY CONCEPTS

Inflammatory Disorders

- Inflammatory diseases of the breast are rare outside of the lactational period.
- The specific cause must be determined as appropriate treatment may be antibiotics, steroids, or surgery.
- The possibility of inflammatory carcinoma mimicking a non-neoplastic inflammatory disorder should always be considered.

Benign Epithelial Lesions

Benign epithelial lesions are classified into three groups, according to the subsequent risk of developing breast cancer: (1) *nonproliferative breast changes*, (2) *proliferative breast disease*, and (3) *atypical hyperplasia*. Most come to clinical attention when detected by mammography or as incidental findings in surgical specimens.

Nonproliferative Breast Changes
(Fibrocystic Changes)

This group includes common morphologic alterations that are often grouped under the term *fibrocystic changes*. To the clinician the term might mean “lumpy bumpy” breasts on palpation; to the radiologist, a dense breast with cysts; and to the pathologist, benign histologic findings. These lesions are termed *nonproliferative* to indicate that they are not associated with an increased risk of breast cancer.

MORPHOLOGY

There are three principal morphologic changes: (1) cystic change, often with apocrine metaplasia, (2) fibrosis, and (3) adenosis.

- **Cysts.** Small cysts form by the dilation of lobules and in turn may coalesce to form larger cysts. Unopened cysts contain turbid, semi-translucent fluid of a brown or blue color (blue-dome cysts) (Fig. 23-6B). Cysts are lined either by a flattened atrophic epithelium or by metaplastic apocrine cells. The latter cells have abundant granular, eosinophilic cytoplasm and round nuclei and closely resemble the normal apocrine epithelium of sweat glands (Fig. 23-6C). Calcifications are common and may be detected by mammography (Fig. 23-6A). Cysts may cause concern when they are solitary and firm to palpation. The diagnosis is confirmed by the disappearance of the mass after fine-needle aspiration of its contents.
- **Fibrosis.** Cysts frequently rupture, releasing secretory material into the adjacent stroma. The resulting chronic inflammation and fibrosis contribute to the palpable nodularity of the breast.
- **Adenosis.** Adenosis is defined as an increase in the number of acini per lobule. It is a normal feature of pregnancy. In nonpregnant women, adenosis can occur as a focal change. Calcifications are occasionally present within the lumens.

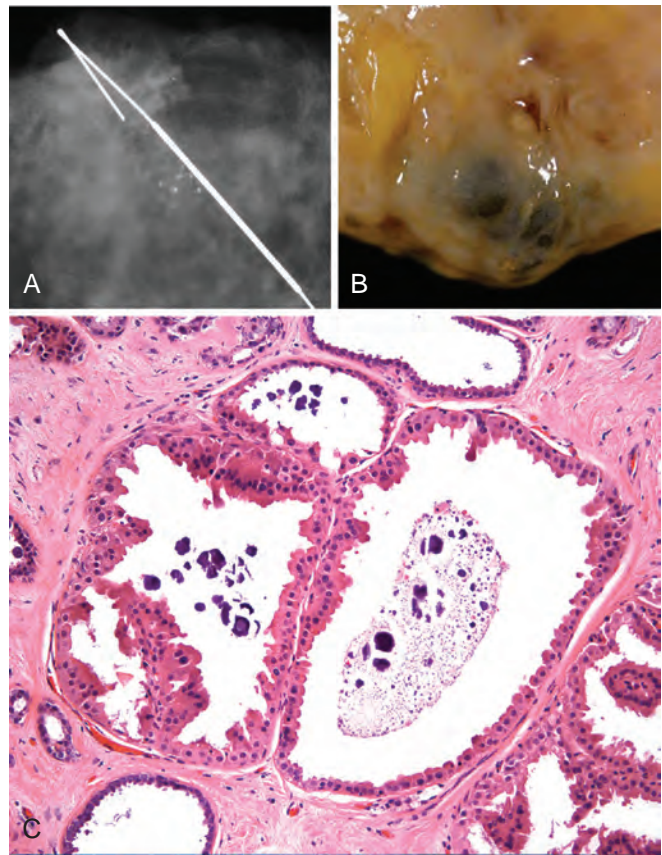


Figure 23-6 Apocrine cysts. **A**, Clustered, rounded calcifications are seen in a specimen radiograph. **B**, Gross appearance of typical cysts filled with dark, turbid fluid contents. **C**, Cysts are lined by apocrine cells with round nuclei and abundant granular cytoplasm. Note the luminal calcifications, which form on secretory debris.

The acini are lined by columnar cells, which may appear benign or show nuclear atypia (“**flat epithelial atypia**”). Flat epithelial atypia is a clonal proliferation associated with deletions of chromosome 16q. This lesion is thought to be the earliest recognizable precursor of low-grade breast cancers, but does not convey an increased cancer risk, presumably because other steps in cancer development are rate limiting.

Lactational adenomas present as palpable masses in pregnant or lactating women. They consist of normal-appearing breast tissue with lactational changes. These lesions are not proven to be neoplastic and may simply represent an exaggerated local response to gestational hormones.

Proliferative Breast Disease Without Atypia

Lesions characterized by proliferation of epithelial cells, without atypia, are associated with a small increase in the risk of subsequent carcinoma in either breast. They are commonly detected as mammographic densities, calcifications, or as incidental findings in biopsies performed for other reasons. These lesions are not clonal and are not commonly found to have genetic changes. Thus they are predictors of risk but unlikely to be true precursors of carcinoma.