

Figure 23-4 Squamous metaplasia of lactiferous ducts. When squamous metaplasia extends deep into a nipple duct, keratin becomes trapped and accumulates. If the duct ruptures, the ensuing intense inflammatory response to keratin results in an erythematous painful mass. A fistula tract may burrow beneath the smooth muscle of the nipple to open at the edge of the areola.

uncommon. This disorder tends to occur in the fifth or sixth decade of life, usually in multiparous women. Unlike squamous metaplasia of lactiferous ducts, it is not associated with cigarette smoking.

MORPHOLOGY

Ectatic dilated ducts are filled with inspissated secretions and numerous lipid-laden macrophages. When ruptured, a marked periductal and interstitial chronic inflammatory reaction ensues, consisting of lymphocytes, macrophages, and variable numbers of plasma cells (Fig. 23-5). Granulomas may form around cholesterol deposits and secretions. Subsequent fibrosis produces an irregular mass with skin and nipple retraction.

The principal significance of this disorder is that the irregular palpable mass mimics the clinical and radiographic appearance of invasive carcinoma.

Fat Necrosis

The presentations of fat necrosis are protean and can closely mimic cancer—as a painless palpable mass, skin thickening or retraction, or mammographic densities or calcifications. About half of affected women have a history of breast trauma or prior surgery.

MORPHOLOGY

Acute lesions may be hemorrhagic and contain central areas of liquefactive fat necrosis with neutrophils and macrophages. Over the next few days proliferating fibroblasts and chronic inflammatory cells surround the injured area. Subsequently, giant cells, calcifications, and hemosiderin make their appearance, and eventually the focus is replaced by scar tissue or is encircled and walled off by fibrous tissue. Ill-defined, firm, gray-white nodules containing small chalky-white foci are seen grossly.

Lymphocytic Mastopathy (Sclerosing Lymphocytic Lobulitis)

This condition presents with single or multiple hard palpable masses or mammographic densities. It can be difficult to obtain tissue with a needle biopsy due to the dense collagenized stroma. Atrophic ducts and lobules have thickened basement membranes and are surrounded by a prominent lymphocytic infiltrate. This condition is most common in women with type 1 (insulin-dependent) diabetes or autoimmune thyroid disease and is hypothesized to have an autoimmune basis. Its only clinical significance is that it must be distinguished from breast cancer.

Granulomatous Mastitis

Granulomatous inflammation of the breast can be a manifestation of systemic granulomatous diseases (e.g., granulomatosis with polyangiitis, sarcoidosis, tuberculosis) or of disorders that are localized to the breast (granulomatous lobular mastitis, rare infections). *Granulomatous lobular mastitis* is an uncommon disease that only occurs in parous women. The granulomas are closely associated with lobules, suggesting that the disease may be caused by a hypersensitivity reaction to antigens expressed during lactation. Treatment with steroids is sometimes effective. A similar histologic pattern is seen in *cystic neutrophilic granulomatous mastitis* caused by *Corynebacteria*. Localized infections by mycobacteria or fungi are very rare and are most common in immunocompromised patients or adjacent to foreign objects such as breast prostheses or nipple piercings.

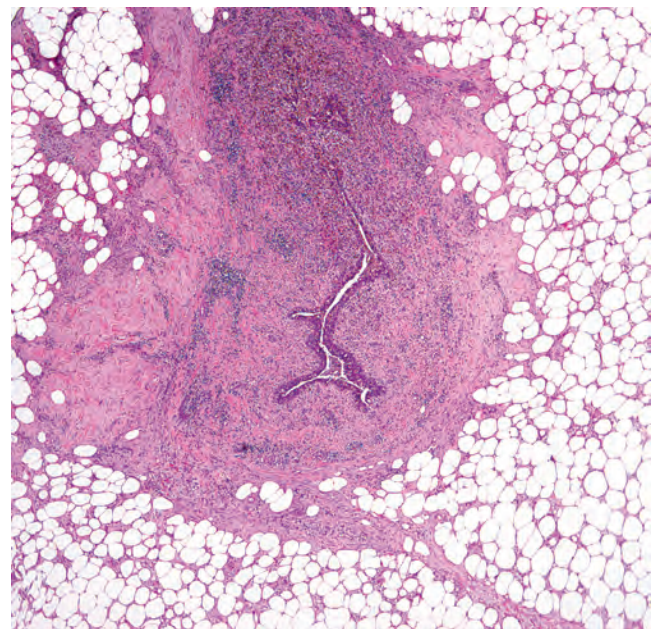


Figure 23-5 Duct ectasia. Chronic inflammation and fibrosis surround an ectatic duct filled with inspissated debris. The fibrotic response can produce a firm irregular mass that mimics invasive carcinoma on palpation or mammogram.