Disorders of the Breast

by Sue Prophet, RRA, CCS, director of classification and coding

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Carcinoma

Breast cancer is the most common form of cancer in women. Risk factors include a personal or family history of breast cancer, delayed childbearing, and personal history of benign breast disease.

A tumor may be identified by mammogram or self-examination. Many tumors are detected by mammogram only and can not be felt at all on physical examination. During the premenstrual phase of a woman's menstrual cycle, increased nodularity may falsely suggest a tumor or may obscure an underlying lesion.

Clinical Findings

When symptoms are present, the most common one is a painless lump. Less common symptoms include breast pain; nipple discharge; erosion, retraction, enlargement, or itching of the nipple; and redness, generalized hardness, enlargement, or shrinking of the breast. Systemic symptoms or weight loss may indicate metastasis. The likelihood of distant metastasis depends upon the size of the primary lesion, the degree of local invasion, and the extent of regional lymph node involvement. Symptoms of advanced carcinoma include edema, redness, nodularity, or ulceration of the skin; fixation of the tumor to the chest wall; enlargement, shrinkage, or retraction of the breast; marked axillary or supraclavicular lymphadenopathy; edema of the arm (caused by metastatic infiltration of regional lymphatics); and distant metastases. Axillary nodes that are fixed to skin or deep structures indicate advanced disease.

Laboratory Findings

In disseminated cancer, the sedimentation rate may be consistently elevated. Liver or bone metastases may be associated with elevation of serum alkaline phosphatase. Hypercalcemia may be present in patients with advanced breast cancer. Recurrent breast cancer may be indicated by an elevated CEA (carcinoembryonic antigen).

Diagnosis

Mammography
Mammography is the only reliable means of detecting breast cancer before a mass can be manually felt. Sometimes mammograms identify breast cancer two years before the tumor reaches a size that can be detected by palpation. Mammography is not a substitute for a biopsy when a patient has a suspicious mass. Mammograms may miss cancer in a very dense breast, and they do not always identify medullary type cancer.

A screening mammogram is a routine mammogram performed on women who are considered either low- or high-risk for the development of breast cancer and who have no presenting symptoms of possible breast disease.

A diagnostic mammogram is one performed to further evaluate the possibility of breast cancer in a patient with signs or symptoms of breast disease.

Reimbursement note: HCFA has expanded its diagnostic mammogram guidelines to encompass individuals with a personal history of breast cancer or biopsy-proven benign breast disease.

Mammographic signs of early breast cancer include microcalcifications, subtle distortions of breast architecture, and crablike lesions that can not be palpated. These findings may not always be present in patients with a mass or other suspicious findings,

so false-negative mammograms do occur.

Needle Localization

Suspicious areas on a mammogram that can not be detected on physical examination may be localized by the placement of two needles or wires under radiologic guidance. The lesion can then be excised and submitted to the laboratory for a pathological diagnosis.

Coding note: In CPT, codes 19125 and 19126 should be assigned for excision of breast lesions that have been preoperatively identified by radiological marker. Code 19125 should be assigned for the first lesion excised and code 19126 for each additional lesion excised (e.g., if there are three lesions, code 19125 would be assigned once and code 19126 would be assigned twice). Since codes 19125 and 19126 only describe the excision, and not the marker placement, codes 19290 and/or 19291 must always accompany these codes. Codes 19290 and 19291 describe the placement of the radiological marker. Code 19291 should be assigned for the placement of each marker for additional lesions. Codes 19126 and 19291 are "add-on" codes and would never be assigned without their associated primary codes (i.e., 19125 and 19290).

Unlike CPT, there is no code in ICD-9-CM to describe the preoperative placement of a radiological marker for needle localization. The marker placement is included in the code for the radiological procedure.

Ultrasonography

Opinions vary regarding the usefulness of ultrasonography in the evaluation of breast masses. Some researchers believe it is only valuable for differentiating a cystic from a solid mass. Others believe it is useful for selective screening of breast masses, discrimination between benign and malignant solid masses, and preoperative localization of a lesion. Those who view it as a screening tool suggest it may be used for patients who are less than 35 years of age and who have dense breast tissue on mammogram, a negative mammogram with persistent breast symptomatology, and/or a high-risk history. Studies have shown that ultrasonography can identify occult solid masses in women with difficult physical and mammographic examinations. Breast ultrasound has shown potential in detection of solid lesions not seen on mammograms and identification of subareolar ductal abnormalities. However, although it may be useful in many situations, breast ultrasound has definite limitations. It is not always reliable in distinguishing complex cysts and fibroadenomas from carcinoma. Ultrasonography is not currently used for routine cancer screening.

Biopsy

A biopsy involves removing a portion of the lesion and examining it histologically to establish a definitive diagnosis. There are several types of biopsies: needle, fine needle aspiration, incisional, and excisional.

In a needle core biopsy, a core of breast tissue is extracted via a large gauge needle.

In a fine needle aspiration, fluid or tissue is aspirated with a long slender needle, and the cells are examined histologically. A needle attached to a syringe or aspiration pistol is pushed through the skin. When the tip of the needle enters the lesion, the barrel of the syringe is pulled, a vacuum is created, and the needle is passed through the lesion one or more times. Once cells are aspirated into the syringe, they are submitted for pathologic examination.

In an incisional biopsy, a sample of the lesion is removed for pathological examination via an open incision.

In an excisional biopsy, local small masses or growths are completely removed.

Staging

Once breast cancer is diagnosed, the disease is staged in order to determine the most appropriate course of treatment and the patient's prognosis. Since there is often distant spread of microscopic tumor cells, even though no obvious metastasis has been detected, breast cancer is often considered a systemic disease and treated accordingly.

Hormonal Receptor Sites

The presence or absence of estrogen and progesterone receptors in tumor cells provides valuable information regarding a course of treatment. Assays for estrogen and progesterone receptors are generally done at the time of initial diagnosis. If the patient later develops metastatic disease, knowledge of her receptor status at the time of diagnosis is useful in treatment planning. Receptor status may change as a result of endocrine therapy, radiation therapy, or chemotherapy. Endocrine therapy is beneficial for many patients whose tumors have positive estrogen or progesterone receptors. About two-thirds of breast cancer patients have an estrogen receptor-positive tumor. The presence of a progesterone receptor is believed to reflect a functional estrogen receptor. Patients with positive receptors have a better prognosis and are more likely to benefit from endocrine therapy than those whose tumors do not have receptors. The presence of both estrogen and progesterone receptors indicates a higher likelihood of response to treatment than the presence of an estrogen receptor alone and a much greater likelihood of response than if neither receptor is present.

Treatment

Treatment may be curative or palliative. Curative treatment is advised for earlier clinical stages. Palliative treatment is provided for patients with a very advanced disease process and for those who have undergone previous treatment and have now developed distant metastases or unresectable local recurrence. Choice of treatment depends upon the patient's age, size of the tumor, stage of the disease, and presence or absence of estrogen and progesterone receptors. Treatment options include varying combinations of surgery (lumpectomy or mastectomy), radiation therapy, chemotherapy, and endocrine therapy.

Surgery

In a radical mastectomy, the affected breast, pectoral muscles, and axillary lymph nodes are removed.

In an extended radical mastectomy, the affected breast, pectoral muscles, axillary lymph nodes, and internal mammary lymph nodes are removed.

In a modified radical mastectomy, the affected breast, underlying pectoralis major fascia (but not the muscle), and axillary lymph nodes are removed. In order to remove the axillary lymph nodes, some physicians may remove the pectoralis minor muscle, while others may simply retract or transect it.

In a simple mastectomy, the affected breast is removed (but not the axillary lymph nodes).

A segmental mastectomy refers to procedures such as a lumpectomy (only the mass is excised), quadrant excision (removal of a breast quadrant), and partial mastectomy (part of a breast is removed).

Surgical treatment of breast cancer may be accompanied by radiation therapy. Adjunct chemotherapy or endocrine therapy may be administered after primary treatment has been completed. These adjunct therapies have been shown to delay recurrence and prolong survival in many patients.

Endocrine Therapy

Tamoxifen administration is a common form of endocrine therapy. It is a nonsteroidal antiestrogen that binds to hormonal receptor sites, thus inhibiting tumor growth. Tumors with positive receptors depend upon estrogen in order to grow.

Pathologic Types of Breast Cancer

Pathologic types of breast cancer are differentiated by the histologic appearance and growth pattern of the tumor. Breast cancer generally arises from either the epithelial lining of the large or intermediate-sized ducts (ductal) or from the epithelium of the terminal ducts of the lobules (lobular). The cancer may be invasive or in situ. Most breast cancers arise from the intermediate ducts and are invasive. Most histologic types are merely subtypes of invasive ductal carcinoma with unusual growth patterns. Ductal carcinoma that has not invaded the extraductal tissue is intraductal or in situ ductal. Lobular carcinoma may be either invasive or in situ.

Histologic Types

- Infiltrating ductal
    - Medullary

    - Colloid (mucinous)
    - Tubular
    - Papillary

- Invasive lobular
- Noninvasive

    - Intraductal
    - Lobular in situ

(Other types not listed above include juvenile, adenoid cystic, epidermoid, and suderiferous.)

Paget's Carcinoma

Paget's carcinoma is an infiltrating intraductal carcinoma, usually well differentiated and multicentric in the nipple and breast ducts. Although the nipple epithelium is infiltrated, gross nipple changes are often minimal, and no tumor mass may be palpable. The first symptoms are often itching and burning of the nipple and the presence of a superficial erosion or ulceration. To confirm the diagnosis, this erosion is biopsied. Paget's carcinoma only represents about 1 percent of all breast cancers, but it is often not detected right away. It is frequently misdiagnosed as dermatitis or a bacterial infection.

Inflammatory Carcinoma

This is the most malignant form of breast cancer and constitutes less than 3 percent of all cases. The tumor grows rapidly, is sometimes painful, and enlarges the entire breast. The skin overlying the tumor becomes erythematous, edematous, and warm. There may not be a distinct mass because the tumor infiltrates the breast diffusely. The inflammatory changes are caused by carcinomatous invasion of the dermal lymphatics. Skin redness and local heat are due to the hypervascularity accompanying the rapid growth of the cancer. Diagnosis is confirmed by needle biopsy showing subdermal lymphatic invasion of tumor cells. A mammogram is nondiagnostic and can fail to show an underlying breast lesion.

Since widespread metastasis occurs quickly, this type of breast cancer is rarely curable.

Table 1 **Associated ICD-9-CM Diagnosis Codes**	
Malignant neoplasm of female breast	174.0 - 174.9 (appropriate code assignment depends upon specific tumor site)
Paget's carcinoma	174.0

Table 2 **Associated ICD-9-CM Procedure Codes**	
Closed [percutaneous][needle] biopsy of breast	85.11
Open biopsy of breast	85.12
Excision or destruction of breast tissue not otherwise specified	85.20
Local excision of lesion of breast	85.21
Resection of quadrant of breast	85.22
Subtotal mastectomy	85.23
Unilateral simple mastectomy	85.41
Bilateral simple mastectomy	85.42
Unilateral extended simple mastectomy	85.43
Bilateral extended simple mastectomy	85.44
Unilateral radical mastectomy	85.45
Bilateral radical mastectomy	85.46
Unilateral extended radical mastectomy	85.47
Bilateral extended radical mastectomy	85.48

Coding note: An excisional biopsy is an open biopsy. If the entire lesion is removed, the procedure should be coded as an excision of a lesion (code 85.21), not a biopsy.

A lumpectomy would be assigned code 85.21.

If a biopsy is performed during the same operative episode as a definitive, therapeutic procedure, both the biopsy and the definitive procedure should be coded (e.g., open biopsy of breast mass followed by mastectomy). The code for the definitive procedure should be sequenced first.

A stereotactic breast biopsy should be assigned code 85.11. In this procedure, three-dimensional coordinate guidance is used to accurately direct the placement of the biopsy needle. This procedure is considered a closed biopsy.

Table 3 ***Associated CPT Procedure Codes***	
Biopsy of breast; needle core (separate procedure)	*19100*
Biopsy of breast; incisional	*19101*
Fine needle aspiration with or without preparation of smears; superficial tissue (e.g., thyroid, breast, prostate)	*88170*
Excision of cyst, fibroadenoma, or other benign or malignant tumor aberrant breast tissue, duct lesion or nipple lesion (except 19140), male or female, one or more lesions	*19120*
Excision of breast lesion identified by preoperative placement of radiological marker; single lesion	*19125*
Excision of breast lesion identified by preoperative placement of radiological marker; each additional lesion separately identified by a radiological marker	*19126*
Mastectomy, partial	*19160*
Mastectomy, partial; with axillary lymphadenectomy	*19162*
Mastectomy, simple, complete	*19180*
Mastectomy, subcutaneous	*19182*
Mastectomy, radical, including pectoral muscles, axillary lymph nodes	*19200*
Mastectomy, radical, including pectoral muscles, axillary and internal mammary lymph nodes (Urban type operation)	*19220*
Mastectomy, modified radical, including axillary lymph nodes, with or without pectoralis minor muscle, but excluding pectoralis major muscle	*19240*
Preoperative placement of needle localization wire, breast	*19290*
Preoperative placement of needle localization wire, breast; each additional lesion	*19291*

Coding note: Code 19100 is identified as a separate procedure. This means that this procedure is commonly carried out as an integral part of another procedure. When it is performed independently of, and is not immediately related to, other services, it may be coded separately.

A lumpectomy would be assigned code 19120 (or 19125 if the lesion was preoperatively identified by a radiological marker). When a breast lump is completely removed, it is not an incisional biopsy. It is an excision of a lesion even though the intent may be to submit it for pathological examination. When the lesion is completely removed, assign the appropriate CPT code for excision of lesion, not a biopsy code.

If multiple lesions are excised through separate incisions, the excision code should be assigned separately for each incision. If several lesions are removed through the same incision, assign the excision code once.

Other Breast Disorders (Nonmalignant)

Fybrocystic Disease

Fibrocystic disease, also known as mammary dysplasia or chronic cystic mastitis, is the most common breast disorder. It is most often seen in premenopausal women and seems to be related to ovarian activity. In this disease, multiple, painful, and usually bilateral benign masses develop in the breast. The size of the masses often changes quickly. Pain tends to occur or increase and mass size may increase during the premenstrual phase of a woman's menstrual cycle. Microscopic findings include cysts, papillomatosis, adenosis, fibrosis, and ductal epithelial hyperplasia.

Patients with this disease have an increased risk of developing breast cancer. Because these lesions are frequently difficult to distinguish from cancer, biopsies of suspicious lesions are often performed to rule out cancer.

There is no cure for fibrocystic disease. Some studies have indicated that elimination of caffeine from the diet may relieve symptoms. With the exception of patients receiving estrogen therapy, symptoms generally subside after menopause.

Fibroadenoma

Fibroadenoma is a benign neoplasm occurring most frequently in young women. The lesion is round, firm, discrete, movable, nontender, and 1-5 centimeters in diameter. Fibroadenoma does not develop in postmenopausal women unless they are receiving estrogen therapy. Treatment consists of excision of the lesion. This condition tends to recur.

Cystosarcoma phyllodes is a type of fibroadenoma that tends to grow rapidly. If it is quite large, a simple mastectomy may be required in order to completely excise the lesion.

Inflammatory Breast Lesions

Inflammatory breast lesions may be divided into two types: aseptic and septic (bacterial). They may also be classified according to breast site: peripheral or central (within one centimeter of areola). Other common descriptors are premenopausal or postmenopausal, and puerperal or nonpuerperal. Staphylococcus aureus is the most common organism identified as the causal agent in bacterial disorders. Mammograms and needle biopsies are of limited benefit in diagnosing these lesions. Excisional biopsy may be required to differentiate them from malignancy.

Fat Necrosis

This condition is sometimes mistaken for cancer because it produces a mass that is often accompanied by skin or nipple retraction. Although trauma is believed to be the cause of this condition, many patients do not recall an injury. Fat necrosis may develop after surgery and radiation therapy. A hematoma may ultimately develop into fat necrosis. Ecchymosis may be seen near the lesion and the area may be tender. Fat necrosis is a relatively rare condition.

Duct Ectasia

Duct ectasia, also known as plasma cell mastitis, is a central inflammatory lesion and generally occurs in older women. It is initiated by an intraductal secretion of fatty acids with dilatation and rupture of the major ducts. The resulting chemical mastitis involves an infiltration of plasma cells and, later, fibrosis with shortening of the major ducts. A toothpaste-like material may be seen oozing from the ducts. Excisional biopsy is performed for diagnostic confirmation. Needle biopsies are inconclusive. This condition is sometimes called "comedomastitis."

Mondor's Disease

Mondor's disease is a superficial thrombophlebitis of the skin of the breast, usually occurring spontaneously in the upper outer quadrant. Initially, there is tender skin erythema, followed in a week or two by linear grooving, skin retraction, and fibrous band formation. This condition is suspected in patients with a tender, superficial, reddened lesion, no underlying lump, and a negative mammogram. A similar vein thrombosis may result from trauma or local breast surgery. In these cases, a cord-like band may extend from the breast down as far as the pubis in the form of a superficial, hyalinized thrombophlebitis. No treatment is required because these lesions resolve spontaneously, usually within two months. Surgical interruption of the cord may speed resolution.

Granulomatous Mastitis

This is a very rare lesion similar to duct ectasia, except that it is always peripheral and confined to the breast lobule. It is an

abscess with central necrosis and surrounding granulation tissue and giant cells. There is no dilatation of the excetory ducts and no lipid material. These small masses are excised or needle-biopsied to confirm the diagnosis.

Septic Lesions
Septic lesions are those in which specific bacteria can be isolated. The intact skin of the breast represents a defense against pathogens. However, the nipple and areolar area is more porous and is not as effective a barrier as skin. Any skin disruption may allow bacteria into the underlying breast tissue, such as may occur with surgery or ulcerating breast cancer. Some infections (e.g., periareolar abscess) arise from within the breast. Other infections are blood borne and represent a manifestation of systemic disease. The most common organism in most types of mastitis is Staphylococcus aureus. Some rare abscesses may occur without a known entry point.

Ulcerating Breast Cancer
Ulcerating breast cancer always involves bacterial infection. The underlying cancer invades and destroys the skin barrier. The predominant organism is Staphylococcus aureus. Other organisms include other staphylococcal species, diphtheroids, streptococcus, and enterococcus.

Systemic Diseases
Systemic diseases are sometimes manifested by breast infections. An example is tuberculous mastitis. Whenever tuberculosis occurs in the breast, it is a secondary infection. It is manifested by a solitary tender lump and frequently involves the axillary lymph nodes. Mammary tuberculosis is classified into three types: nodular, diffuse, and sclerosing. Mycobacterium tuberculi can be isolated from fistulas. Treatment consists of culture followed by the appropriate antibiotics, usually isoniazid, rifampin, and pyrazinamide.

Other systemic infections causing breast lesions are actinomycosis, syphilis, and typhoid fever. Treatment of the painful, fistulating lesion caused by actinomycotic involvement of the breast often requires surgical debridement and appropriate antibiotics. Syphilitic infection, in the form of a chancre or gumma, occasionally occurs in the breast. All three of these types of lesions respond to appropriate antimicrobial drugs. Excisional or needle biopsy may be required to differentiate these lesions from cancer.

Disorders Related to Breast Implants
Breast implants may cause breast pain and inflammation. Silicone mastitis is an inflammatory condition caused by silicone breast implants. A fibrous reaction around implants can cause sufficient pain to warrant removal of the implant. The direct injection of silicone or paraffin has been used in the past to achieve breast enhancement and may cause a painful reaction, resulting in hard masses, ulceration, or sinus tracts. This condition is a type of chemical mastitis.

Abscesses

Periareolar Abscess
Periareolar abscesses are eccentric, always in or very near the areola, and do not involve the nipple. A pustule and grossly infected sinus tract are present. Most pathologists believe these abscesses are a bacterial form of duct ectasia. The basic pathological change begins with squamous metaplasia of the lining of one or more of the major nipple ducts, with obstruction of the duct by keratin plugs. The ducts rupture, followed by bacterial invasion. Suppuration continues until the keratin-producing squamous epithelium is totally removed. This abscess either ruptures spontaneously or is surgically incised, and a persistent mamillary fistula is formed with recurrent abscess formation or purulent drainage. Anaerobes are the most common organisms cultured from these abscesses. In addition to antimicrobial drugs, treatment consists of removal of the mamillary fistula and the entire major ductal system. The abscess may recur. Periareolar abscesses usually occur in premenopausal women.

Puerperal Mastitis and Abscess
Mastitis is seen in approximately 2.5 percent of nursing mothers. It is frequently bilateral. Sore, fissured nipples are the usual portal of entry and the cause of incomplete breast emptying. With breast engorgement and milk stasis, the ducts become plugged. A stagnant pool is formed, which is an excellent breeding ground for organisms. The best treatment for milk stasis is to empty the breast. Leukocyte and bacterial counts in breast milk are used to differentiate breast inflammation from infectious mastitis. It is believed infection is introduced via the baby's mouth. The infectious agent is usually Staphylococcus aureus. Symptoms include redness, tenderness, and induration of the skin of the breast. In the early stages, the infection can be successfully treated with antibiotics. If it progresses to form a localized mass with local and systemic signs of infection, an

abscess has developed and should be drained. Approximately 10 percent of puerperal mastitis cases proceed to abscess formation. These abscesses are usually peripheral. Treatment involves incision and drainage with breaking up of the abscess cavity. These cavities may be curetted and the skin and cavity edges loosely sutured around drains to promote healing. Needle aspiration may be performed but may be ineffective due to multiple cavities.

Peripheral Breast Abscesses

Only a quarter of all abscesses at any age are peripheral. Diabetics are more prone to development of a breast abscess than the general population. Patients who are immunocompromised may develop abscesses anywhere, including the breast.

Occasional outbreaks of Pseudomonas aeruginosa mastitis have occurred due to inadequate chlorination of pools and hot tubs. Superficial follicularitis of the breast skin develops and the condition subsides spontaneously with 3-4 days.

Table 4 **Associated ICD-9-CM Diagnosis Codes**	
Benign neoplasm of breast	217
Solitary cyst of breast	610.0
Diffuse cystic mastopathy	610.1
Fibroadenosis of breast	610.2
Fibrosclerosis of breast	610.3
Mammary duct ectasia	610.4
Other specified benign mammary dysplasias	610.8
Benign mammary dysplasia, unspecified	610.9
Inflammatory disease of breast	611.0
Fissure of nipple	611.2
Fat necrosis of breast	611.3
Galactocele	611.5
Lump or mass in breast	611.72
Phlebitis and thrombophlebitis, of other sites, other	451.89
Actinomycotic infections, of other specified sites	039.8
Tuberculosis of other organs, other specified organs	017.9x
Toxic effects of other substances, chiefly nonmedicinal as to source, silicone	989.83

Coding note: Fibroadenoma is assigned code 217 and Mondor's disease is assigned code 451.89.

Table 5 **Associated ICD-9-CM Procedure Codes**	
Mastotomy	85.0
Local excision of lesion of breast	85.21
Aspiration of breast	85.91

Table 6 **Associated CPT Procedure Codes**	
Puncture aspiration of cyst of breast	19000
Puncture aspiration of cyst of breast; each additional cyst	19001
Mastotomy with exploration or drainage of abscess, deep	19020
Excision of cyst, fibroadenoma, or other benign or malignant tumor aberrant breast tissue, duct lesion or nipple lesion (except 19140), male or female, one or more lesions	19000

Coding note: Codes 19000 and 19001 describe the puncture of a cyst with a syringe needle. Fluid from the cyst is evacuated into the syringe. Code 19000 is assigned to the first cyst that is aspirated and code 19001 is assigned for each additional cyst. Since 19001 is an "add-on" code, it would never be assigned by itself. Puncture aspiration of a cyst differs from a fine needle aspiration biopsy in that the biopsy needle is inserted into the lesion multiple times. Fluid is aspirated each time the position of the needle is changed. The needle is not removed after each aspiration. In a puncture aspiration, the needle is inserted once, fluid is aspirated into the syringe, and the needle is removed.

Code 19020 describes an incision and drainage of a breast abscess.

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