

Ependymoma

Tumor originating from the walls of the ventricles in children and young adults. In the posterior fossa ependymomas often show a characteristic plastic growth facilitating the differentiation from a medulloblastoma or pilocytic astrocytoma.

►Neoplasms, Brain, Posterior Fossa, Pediatric

Ewing's Sarcoma

Ewing's sarcoma is a highly malignant tumor that is found predominantly in the lower extremity, in particular at the diaphysis and metaphysis of the femur followed by the tibia and humerus. Ewing's sarcoma is most common in the first and second decade of life. Typical radiographic findings are permeative bone destruction, lamellar (onion-skin) and spiculated periosteal reactions and soft tissue extension.

►Neoplasms, Brain, Malignant

Fibrocystic Disease, Breast

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Synonyms

Aberrations of normal development and involution (ANDI); Bloodgood's disease; Chronic cystic mastitis; Cystic hyperplasia; Cystic mastopathy; Fibroadenosis; Fibrocystic changes; Hyperplastic cystic disease; König's disease; Mammary dysplasia; Mammary dystrophy; Reclus's disease; Schimmelbusch's disease; Sclerocystic disease

Definition

Fibrocystic disease has been a clinical problem for a long time, as it is reflected in the writings of Astley Cooper at the beginning of the nineteenth century. In fact, it is a confusing and inexact term. All clinicians have a concept of what fibrocystic disease is, but it is difficult to define and to

differentiate from normal conditions of the breast. Fibrocystic disease is not a distinct entity but a heterogeneous group of abnormalities that include fibrosis, cysts, ►apocrine metaplasia, ►adenosis, and ►hyperplasia (1, 2). Some of these abnormalities cannot be considered as pathologic conditions and do not increase the risk of the individual's developing breast cancer. However, other included conditions, such as some types of hyperplasia, may increase that risk. Nowadays fibrocystic disease is a term that should not be used anymore because it is confusing and does not reflect a real pathology or a risk of developing breast cancer. Fibrocystic disease is in fact a "nondisease."

Pathology/Histopathology

There is no specific pathology of fibrocystic disease. Fibrosis, cysts, apocrine metaplasia, adenosis, and hyperplasia compose the spectrum of fibrocystic disease.

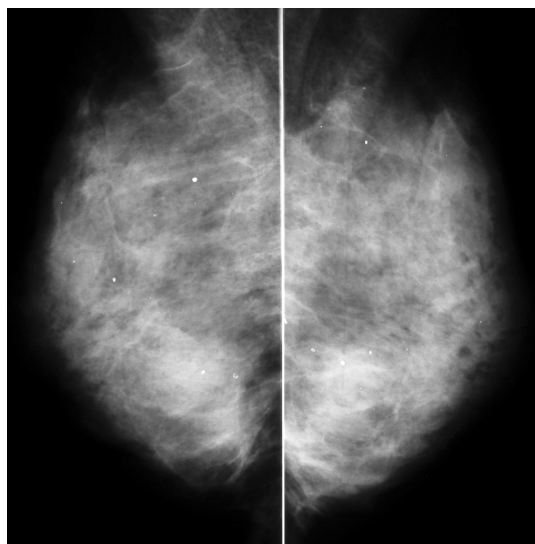
Clinical Findings

Palpation of many normal breasts is difficult and unspecific, especially in young women. Firm, granular, or painful breasts at palpation, with cyclic changes, are frequently found in clinical practice and have for many years been described as "fibrocystic." But again, the term "fibrocystic disease" should not be routinely employed because in most cases it only describes the difficulty of studying these breasts, not a pathologic condition (1, 2).

Imaging

Mammography

The term "fibrocystic disease" should be avoided in mammographic reports, and it is not included in the American College of Radiology (ACR) breast imaging reporting and data system (BI-RADS) lexicon (3). In fact, the ambiguous significance of this term, prolifically used in other times, has made it difficult to standardize mammographic reports. This term has been used to describe dense breasts, usually with multiple round to oval masses, with well-delimited or obscured margins. Dense breasts were initially described as dysplastic by Wolfe. However, this term should also not be used because it is confusing. Nowadays, these types of breasts are classified as ACR class 4 (Fig. 1). The main problem of these breasts is the lower sensitivity to detect carcinoma compared with fatty breasts. Dense breast tissue reduces



Ependymoma. Figure 1 Dense breasts (American College of Radiology class 4). Mediolateral oblique views.

the sensitivity from 80% in fatty breasts (ACR class 1) to 30% (ACR class 4) (4).

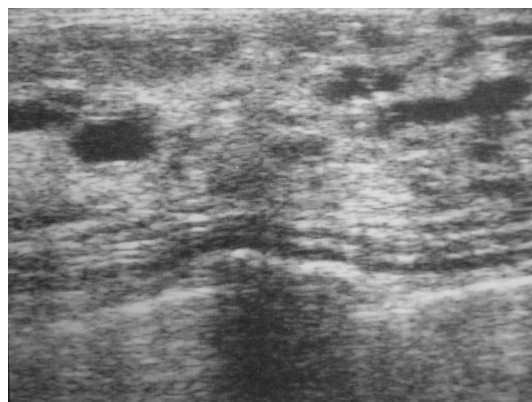
It remains controversial whether dense breast have a higher risk to develop breast cancer than fatty ones. Some studies support this, but additional studies are needed (4).

Ultrasound

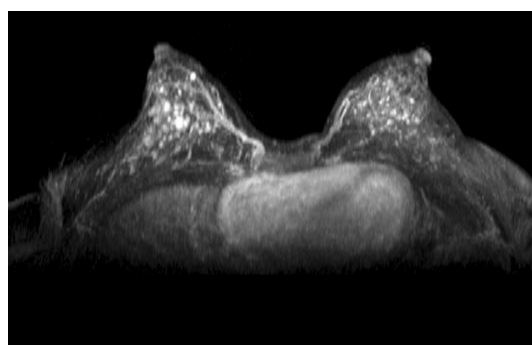
Ultrasound is the technique of choice to diagnose [▶breast cysts](#), a usual component of dense breasts (Fig. 2). It allows accurate characterization of a palpable mass, which is frequently found in these breasts, as cystic or solid. Moreover, ultrasonography may play a role in detecting breast cancers not seen on mammography. Nevertheless, supplemental use of ultrasonography in women with asymptomatic dense breasts is still not accepted as a standard indication (5).

Magnetic Resonance Imaging

Magnetic resonance imaging should not be used to evaluate a breast lump in dense breasts. However, it plays an important role in determining the size of a breast cancer, especially in dense breasts, as well as determining possible multicentricity or bilaterality. Note that dense breasts may cause false positive results on magnetic resonance because the fibroglandular tissue may exhibit



Ependymoma. Figure 2 Ultrasonography of dense breasts. Multiple small cysts are seen.



Ependymoma. Figure 3 Contrast-enhanced magnetic resonance imaging (Flash3D, MIP) in normal dense breasts. Multiple foci due to spontaneous hormone-induced enhancement are seen.

enhancement after paramagnetic contrast administration due to hormone stimulation (Fig. 3).

Nuclear Medicine

Nuclear medicine does not play a role in diagnosing fibrocystic disease. Rarely, dense breasts may uptake the radionuclide, causing false positive results on positron emission tomography scans.

Diagnosis

Cyclic breast pain not associated with a palpable abnormality is not an indication for imaging techniques.

Most breast cancers do not present as pain, although in rare cases they may be painful. However, a breast lump always needs to be carefully studied. In spite of the lower sensitivity of mammography in dense breasts, it continues to be the first imaging tool used. If the palpable abnormality is mammographically benign, such as a lipoma, fibroadenolipoma, or an oil cyst, no further diagnostic procedures are required. However, if benignity cannot be ensured, or if the palpable lesion is not identified, an ultrasound exam is needed. Palpable cysts may be easily evacuated, but if a palpable lesion cannot be ensured as benign, a biopsy should be performed.

Bibliography

1. Guinebretière JM, Menet E, Tardivon A et al (2005) Normal and pathological breast, the histological basis. *Eur J Radiol* 54:6–13
2. Hughes LE (2000) Problems of concept and nomenclature of benign disorders of the breast. In: Hughes LE, Mansel RE, Webster DJT (eds) *Benign Disorders and Diseases of the Breast. Concepts and Clinical Management*, Saunders, London, pp 1–5
3. American College of Radiology (1995) Breast imaging reporting and data system (BI-RADS). American College of Radiology, Reston, VA
4. Liberman L, Menell JH (2002) Breast imaging reporting and data system (BI-RADS). *Radiol Clin North Am* 40:409–430
5. Berg WA (2004) Supplemental screening sonography in dense breasts. *Radiol Clin North Am* 42:845–851

Fibrothecoma

Fibrothecomas are solid ovarian stromal tumors which may contain dense calcifications or cystic degenerations. They typically occur in postmenopausal women. Due to hormonal effects, women may present with abnormal uterine bleeding.

► [Masses, Ovarian](#)

Fibrous Dysplasia

Fibrous dysplasia is a disorder which is characterized by replacement of normal bone by islands of metaplastic woven bone. The disease can occur in a monostotic and a polyostotic form and is regarded as a developmental anomaly with an arrest of osseous maturation at the woven bone stage.

► [Neoplasm-like Lesions, Bone](#)



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