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Some Breast Malformations

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ABSTRACT

The breast or milk gland is the largest skin gland, characteristic of the female gender, which is called the whole mammalian genus. It is located on the ventral side of the chest at the border of the bone and cartilage of the fourth rib. Breast is a genetic apocrine skin gland. The female infant's breast does not differ from the male infant's breast. One and the other immediately after birth excrete secretion under the influence of prolactin hormone. Until the beginning of puberty, men's and women's breasts are developing equally, and then men's breasts are generally no longer developing while women breasts, under the influence of female sex hormones, develop and its development ends during pregnancy and breastfeeding.

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Introduction

In Western society, it often seems that a woman's breasts have two functions or roles: one that is sexual, and one that is maternal [1]. The breasts are visible social sex symbols, and they are often a key source of a woman's anxiety about her body. Breasts often define women in both the public and private eye.

The breasts that is, the mammary glands are large, modified sebaceous glands contained within the superficial fascia of the chest wall located over the pectoral muscles. Each consists of a nipple, lobes, ducts, and fibrous and fatty tissue. Each breast is composed of 12 to 20 lobes of glandular tissue. The number of lobes is not related to the size of the breast. The lobes branch to form 10 to 100 lobules per lobe, which are in turn subdivided into many secretory alveoli. These glands are connected together by a series of ducts. The alveoli produce milk and other substances during lactation. Each lobe empties into a single lactiferous duct that travels out through the nipple. As a result, there are 15 to 20 passages through the nipple, resulting in just as many openings in the nipple.

Fatty and connective tissues surround the lobes of glandular tissue. The amount of fatty tissue depends on many factors, including age, the percentage of body fat relative to total body weight, and heredity. Cooper's ligaments connect the chest wall to the skin of the breast, giving the breast its shape and elasticity. The size of the nonpregnant breasts reflects the amount of adipose tissue in the breast rather than the amount of glandular tissue. The secretory nature of the breasts develops during pregnancy.

The nipple and areola are located near the center of each breast; the areola is the pigmented area surrounding the nipple. These areas usually have a color and texture that differ from those of the adjacent skin. Notably, the color of the nipple–areolar complex varies and darkens during pregnancy and lactation. The consistency of the nipple and areola may range from very smooth to wrinkled and bumpy. The size of the nipples and areolae also varies a great deal from woman to woman, and some size variation between a woman's breasts is normal. The nipple and areola are made of smooth muscle fibers and feature a thick network of nerve endings.

Breasts

The female breasts are each composed of about twenty lobes of glandular tissue embedded in fibrous and adipose tissue [2]. The lobes are arranged circumferentially much as petals on a flower. Each lobe consists of clusters of glands (terminal ductules or acini) in which milk is made during pregnancy, and a series of intralobular ducts connecting the acini and the stromal tissue in which the acini and ducts are located. Taken together these three components are called the terminal duct lobular unit (TDLU). The ducts of the TDLU converge to form large ducts that extend to the nipple. The ductules and ducts of the lobular system are bilayered. The luminal epithelial cells lining the ducts are the source of milk during lactation and also of much breast pathology, the most important being carcinoma. The outer layer is myoepithelial in nature and characteristically is lost in invasive breast cancer. Preservation versus loss of the bilayered nature of the lobular system is an important diagnostic criterion in separating benign from malignant breast disease.

Development

Embryologically, the breasts develop from columns of cells called mammary ridges, which extend along the anterior body wall from the armpits to the upper thighs [2]. Most of the ridges disappear in the course of prenatal development except for the parts in the

midthoracic region, which give rise to the breasts and nipples. Sometimes people have extra breasts or nipples. These are most commonly found in the armpits or on the lower chest below and medial to the normal breasts, but they may appear anywhere along the course of the embryonic mammary ridges (the milk line). Extra nipples and breast tissue may be a source of embarrassment to the individual, but usually they do not cause other problems.

Disorders

Benign breast disorders are common [3]. Fibrocystic disease, the most frequent condition, is clinically apparent in about 50% of women. This disease is characterized by hyperplastic changes that may involve any or all of the breast tissues. Changes may be hormonally mediated and caused by a relative or absolute decline in progesterone or, by contrast, an increase in estrogen. When hyperplastic changes are also accompanied by cellular atypia, the risk for malignancy is increased. The clinical picture is usually one of multiple bilateral lesions that may become painful and/or tender, particularly premenstrually. The disease is often diagnosed and problematic during the young adult years, with the end of symptoms after menopause (unless, of course, exogenous estrogens are taken). Treatment decisions are moderated by the age of the woman, symptom severity, and the relative risk for breast malignancy. Particularly troublesome cysts are aspirated to relieve pain (and to determine the absence of malignancy), but in severe circumstances subcutaneous mastectomies may be considered.

Although the diagnosis of cancer is a devastating experience, most women cope successfully. In fact, many report renewed vigor in their approach to life, stronger interpersonal relationships, and a "survivor" adaptation. These outcomes do not, however, describe the process of adjustment, which may include feelings of an emotional crisis at diagnosis, fears of cancer treatment and changes it may bring, and a dread of life changes or adjustments. For decades the understanding of the psychologic processes and outcomes was largely clinical, consisting of detailed case studies of patients and clinical descriptions of difficult treatment experiences. The message from these reports was that the psychologic trajectory for women treated for breast cancer was guarded at best.

More recently, controlled research on the behavioral and psychologic aspects of cancer has described the specific difficulties that cancer patients may face, the proposed etiologic mechanisms for these processes, and the tested psychologic interventions to enhance coping. In much of this research women with breast cancer have been the study participants, although those with disease at other sites have received study as well.

The effects of diseases and treatment for disease can impair natural fertility [4]. Gynaecologic cancers and common forms of disease are associated with impaired fertility and reproductive processes. Common therapies for cancers include chemotherapy and radiotherapy, and both can affect future fertility. However, women affected by gynaecologic cancers such as cervical, ovarian, endometrial and breast cancers do not have to exclude the possibility of future fertility altogether, although they are unlikely to be able to conceive naturally. Recent predictions for prevalence rates of cancer for women under the age of 50 in the USA has reached substantial proportions (113/1000), and 1 in every 250 adults are estimated to be childhood survivors of cancer. The early detection and treatment of cancers and improved survival rates results in improving trends for fertility preservation treatments to address quality of life issues. These demands for fertility preservation go hand in hand with lifestyle changes associated with the trend to delay childbearing, which also results in demands for assisted conception.

The individual effects of lifestyle factors, dietary, smoking and alcohol consumption as well as environmental pollutants and diseases and treatments for serious disease, clearly have detrimental effects on reproductive health. Increasing awareness is necessary to allow individuals to make lifestyle and dietary choices to circumvent the effects of environmental pollutants on reproductive health. Health communication therefore needs to focus on increasing people's understanding of the seriousness of the effects that uninformed choices may have on their reproductive health. Importantly, the combined effects of these unhealthy lifestyle behaviours exceed the sum of the individual effects. This is worrying, because risky behaviours and poor lifestyle choices often occur together. Research has considered the ethical debate of resource allocation towards treatment of individuals with morbidity due to lifestyle factors and the cost benefit analyses of treatment effectiveness in these individuals. However, because much of the research on poor lifestyle behaviours and reproductive health and outcome is retrospective, the effects may be mediated by other factors. Some of the research is reliant on self reporting and much of it infl uenced by a number of other variables such as age, quality of housing, environmental toxins, co-disease, and so on. The status of resource allocation and individual and professional 'responsibility' for health care, education and treatment therefore has a long way to go.

Breast Pain

Mastalgia is a symptom complex of breast pain and tenderness, with or without nodularity. Among presenting breast complaints in primary care, mastalgia is at least as common, if not more common, than finding a lump [5]. Most women are concerned about cancer. However, in a study of 987 women whose only complaint was breast pain, <1% had a malignancy on mammogram. Mastalgia is either cyclic or noncyclic, and the management depends on this categorization. Reassurance, after appropriate evaluation, that the pain is not due to cancer will be sufficient for most women; roughly 15% will require additional treatment.

Postsurgical breast pain may occur at the site of an incision, particularly if the lines of Langer have been crossed. Mondor's disease (phlebitis of the thoracoepigastric vein) may be related to a history of breast surgery, trauma, or radiation. Costochondritis (Tietze syndrome) reportedly accounts for approximately 7% of noncyclic mastalgia. Ruptured breast implants may also be a cause of localized breast pain. Although subclinical operable breast cancer may present with noncyclic breast pain of recent onset, it is rare that pain is the only presenting symptom in malignancy.

Cyclic mastalgia is typically most severe premenstrually and subsides during the menses. It is usually bilateral, in the upper outer breast quadrants, and associated with nodularity. Women often characterize the pain as dull, aching, or heavy. The range of severity can be from mild to severe enough to limit clothing selections, sleep positions, or hugging. Patients should, therefore, be questioned regarding the effect on their lives. Obtain a history of current hormone therapy or oral contraceptive therapy, and previous history of breast problems or surgery. You should also ask about a family history of breast problems, including cancer.

Women with noncyclic mastalgia are more likely to describe their pain as unilateral, with no temporal relationship to their menstrual cycle. It may be constant or remitting, but the periods without pain are not related to the menses. The pain is often described as sharp, burning, or drawing and is more commonly located in the subareolar or medial portion of the breast. Non-breast causes may result in symptoms such as radiation to the arm or axilla, or

pain with deep inspiration. As with cyclic mastalgia, ask patients about previous breast problems or surgery and any family history of breast problems or cancer.

Abscesses

Breast abscesses are more common in nonlactating women and are typically found in the third to eighth decades of life [2]. Postpartum mastitis occurs in 1%–5% of lactating women.

The patient with a breast abscess typically presents with an edematous, painful, erythematous, and indurated area of the breast. Increased warmth is usual and associated symptoms of fever, chills, vomiting, and drainage from the nipple are common. A mass is commonly found in the subareolar or periareolar regions of the breast. Nipple inversion of recent onset may also be reported. The patient may or may not be actively breast-feedingat the time of onset.

Patients with mastitis will report pain and are found on examination to have a warm, erythematous, indurated breast without localized mass. They may have fever.

Carcinoma

Breast carcinoma occurs in both sexes [6]. It is a rare tumor in men, whose breast tissue is not subjected to stimulation by ovarian hormones, but it is the most frequently diagnosed cancer in women and ranks second as a cause of cancer deaths (exceeded only by lung cancer). Breast cancer incidence rates declined drastically in the early part of the 21st century with the recognition that combined estrogen-progesterone therapy to reduce the symptoms associated with menopause (hormone replacement therapy) was a major risk factor for breast cancer. Additional modifiable risk factors include being overweight, physically inactive, consuming alcohol, or being a heavy smoker. Hormonal factors also influence the risk of breast carcinoma. Women who have never borne children or had their first child after age thirty are at increased risk, as are women who have had early onset of menses (menarche) or late menopause (that is, have had a long menstrual history). High breast tissue density (increased glandular relative to fat tissue) as measured on mammography also may indicate increased risk, but this may be due to the difficulty of early detection in such breasts rather than to heightened risk. There is some tendency for breast carcinoma to run in families, and a woman is at higher than normal risk if her mother or sister has had a breast carcinoma. Inherited mutations can lead to striking increases in breast cancer susceptibility. Two genes (BRCA1 and BRCA2), although rare in the population (less than 1 percent), account for up to 10 percent of all female breast cancer and up to 20 percent of breast cancer that occurs in families. In summary, the etiology of breast cancer is multifactorial and involves genetic background, hormonal status, and poorly defined environmental factors. Significant differences in breast cancer frequencies are found in different populations and socioeconomic groups. Mammography has led to the understanding that breast cancer originates in "in situ disease," which is restricted to the ducts and lobular system and is not (yet) capable of metastasis.

In this meta-analysis of 11 RCTs (Randomized Controlled Trial), the RR (Relative Risk; Respiratory Rate) of breast cancer mortality for women invited to screening, compared with controls, was 0.80 (95% CI 0.73– 0.89)— an RRR (Relative Risk Reduction) of 20%. although the review was based on historical trials and therefore has limited applicability to modern breast cancer management, it was concluded that screening reduces breast cancer mortality, but at the cost of some overdiagnosis (breast cancers diagnosed that would never have caused mortality, if untreated) [7]. For every 10,000 UK women aged 50y invited to screening for the next 20y, 43 deaths from breast cancer would be prevented, and 129 cases of breast cancer, invasive and non-invasive, would be overdiagnosed.

This review provided further evidence to support the continuation of breast screening. However, it is recognized that information should be made available in a transparent and objective way to women invited to screening, so that they can make informed decisions.

To perform an independent review of the evidence of the benefits and harms of breast screening. This review focused on the impact of screening on mortality and overdiagnosis in the context of the UK breast screening programmes, which currently invite women aged 50– 70y for a screening mammography every 3y (to be extended to 47– 73y).This review and meta-analysis highlight the uncertainties surrounding the benefits and harm of breast screening. Meta-analyses of these trials are complicated by the heterogeneous methods used such as different age ranges of women screened, screening intervals, and length of F/U (Follow-Up). This review provides independent evidence of a 20% relative reduction in death from breast cancer in women invited for breast cancer screening, a finding consistent with other meta- analyses. However, it highlights a higher rate of overdiagnosis than has hitherto been communicated to women.

Older Patients

Breast examination is generally simpler in older women [8]. Fat diminished, making breast tissue and the tumors that arise from it more easily palpable. Routine screening mammograms annually or every other year should be continued lifelong or until a decision is reached that a discovered cancer would not be treated; agespecific breast cancer incidence increases at least until age 85, and no evidence indicates that treatment is not effective in older women. Current recommendations for breast cancer screening suggest yearly mammography until age 69, but there has been much discussion about revising the age to 74, 79, or removing an upper age limit entirely. Routine screening mammography annually is part of the Medicare benefit,and age cutoffs or stopping screening on the basis of age alone is controversial. Routine screening mammograms should be continued with the understanding that the patient and/or family are aware that an abnormal result will provoke more aggressive evaluation. Many elderly women experienced considerable anxiety concerning more testing when their mammographies appeared suspicious, even though the vast majority did not have breast cancer. Accordingly, discussions as to how the information will be utilized should take place before testing is initiated.

Conclusion

The female breast is a complex tubulealveolar gland composed of 20 to 25 individual glands. Each of them together with connective and fatty tissue builds one slice. The slices are separated by a thicker connective tissue, and each slice of the breast belongs one main drainage channel which ends with a funnily enlargement on the nipple. The sexually mature woman's breast cyclically changing which depending on the menstrual cycle. The breast is a symmetrical paring organ, located on the front of the chest. The normal size reaches between sixteen age and nineteen age. It is mostly placed between the second and the seventh ribs, and between the lateral edge of the chest bone and the middle axillary line. The root of the breast lies in the area of second rib

and continues in the body.

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