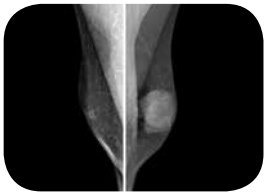

Male Breast Cancer: Case Report

Cáncer de mama en hombre: Presentación de caso

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Summary

Breast cancer in men is rare, it represents less then 1% of all male cancers, it's present between the ages of 60 through 70 years with an age peak at 67 years; the invasive ductal carcinoma is the most prevalent in men. Clinically, it is detected as an odorless, unilateral retro- or para-areolar nodule. Unlike with women, where screening studies are performed, in men it's usually diagnosed later on, because the low incidence of this cancer in male patients and the absence of early signs and symptoms leads to a delayed search for medical attention delayed. For diagnosis, a mammography can be used that helps differentiate between benign and malign mammary diseases. In this article we presented the clinical case of a patient that visits the Honduran Social Security Institute, diagnosed with ductal carcinoma.

Resumen

El cáncer de mama en hombres es poco frecuente, representa menos del 1 % de todos los cánceres masculinos, se presenta entre los 60-70 años con un pico de edad de 67 años; el carcinoma ductal invasivo es el que prevalece en varones, clínicamente se detecta como un nódulo unilateral indoloro retroareolar, o paraareolar. A diferencia de la mujer donde se realizan estudios de tamizaje, en los hombres suele diagnosticarse más tarde, porque buscan atención médica tardíamente por la poca incidencia de cáncer en pacientes masculinos, por la ausencia de signos y síntomas tempranos. Actualmente se puede utilizar para el diagnóstico la mamografía que ayuda a diferenciar entre enfermedades mamarias benignas y malignas. En este artículo se presenta el caso clínico de un paciente que acude al Instituto Hondureño de Seguridad Social, a quien se le diagnosticó carcinoma ductal.

Introduction

Breast cancer in men is a rare pathology, representing less than 1% of all male cancers (1-3); and almost 1% of breast cancers (4,5). The incidence of breast cancer in men with respect to women is 1: 100 (1,6), is present in less than 1 case in 100,000 men (1,4,5,7); and is responsible for 0.1% of cancer deaths in men (8).

The average age of presentation is between 60-70 years (2,5,6,9), with an average of 67 years (10); the male population affected is 5 to 10 years older than the female population (1), and invasive ductal carcinoma is the one that prevails in men, in 65 to 95% (5).

Clinical case

A 65-year-old patient with no pathological, toxic, allergic, surgical or family history of importance attended consultation with an increase in volume in the left breast of 20 days of evolution.

On physical examination, a painless mass of 3 cm was observed, superficial, not adhered to the thoracic wall, well defined, hard, mobile, with thickening and slight flush of the skin, located in the retroareolar region of the left breast. The axilla and supraclavicular fossae were negative for adenopathies. The patient had no family history of breast cancer, was not receiving hormone therapy, nor was he obese.

A bilateral mammogram is performed that shows:

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» Thickening of the skin and subcutaneous cellular tissue with increased left breast density.
» In the retroareolar region of the left breast, an oval nodule was observed, with macrolobulations, of high signal, of 3.7 × 3 cm in transversal diameter and anteroposterior in craniocaudal projection (figure 1).
» No grouped microcalcifications.
» Normal right breast without evidence of mammary glandular tissue.
» Without bilateral axillary ganglia.

Ultrasound was also performed, which showed a nodular, ovoid image, with macrolobulations, hypoechoic, homogeneous, circumscribed, vascularized, without calcifications, located in the retroareolar region of the left breast, 3 × 7 cm in its major diameters and cataloged as BIRADS IVC (figure 2).

Considering the age of the patient, the findings in the physical examination of unilateral mammary mass with inflammatory changes in the skin, and taking into account that in the two imaging studies a lesion with suspicious characteristics was detected, a histopathological study was determined, for which a biopsy was taken by Trucut guided by ultrasound with a 20 × 9 cm needle, from which cylinders of yellowish solid tissue of approximately 9 mm were obtained; the histopathological study revealed a group of epithelial cells with mild atypia, of homogeneous size, without mitosis. The cellular nests were observed in the stroma with an infiltrative appearance. The findings are consistent with malignant epithelial lesion of the breast.

The anatomopathological diagnosis was invasive ductal carcinoma, so complementary imaging studies were performed in search of metastasis, and immunohistochemistry.

Chest x-ray and abdominal ultrasound were normal, as well as single-phase and contrast-enhanced brain scans.

A thoracoabdominal tomography was performed, which evidences two adenopathies in the left axillary region of 2.2 × 2 cm and 1.9 × 1 cm, respectively, with a 2.5 mm cortex (figure 3). In addition, they identify osteodegenerative changes of lumbar spine and enlarged prostate. No metastatic lesions are observed. Magnetic resonance imaging (MRI) showed nodular image in the left breast of high signal with information T1 and T2 (figure 4).

ER (+) 99% positive cells
PR (+) 95% positive cells
HER2 / negative NEU

Discussion

The male mammary glands have a discoid shape with a diameter similar to that of the areola, 3 to 4 mm thick, they are composed of fatty tissue with some ducts and connective tissue, but without the development of acini and lobules; This breast tissue can respond to hormonal stimuli, which results in the growth of connective tissue and conduits (gynecomastia), and can also develop cancer. These two entities are the most frequent mammary pathologies in man (11).

In England, the first case of male breast cancer was documented in the 14th century, by John Anderne; this entity is currently responsible for 0.1% of cancer deaths in men (8). The percentage of bilaterality is less than 2% (8). Breast cancer in men is diagnosed later than in women (3), and the left breast is frequently more affected than the right breast (11), as in the case of this patient.

In early stages, breast cancer is usually asymptomatic and painless, and usually the patient consults when there are already symptoms, because it is at an advanced stage (12).

The most frequent clinical presentation is a unilateral retro-areolar, or para-areolar, nodule, eccentric with respect to the nipple with an average of 20 mm at the time of diagnosis (11), only in 5 to 10% of cases is pain associated with the mass (8) There is frequent involvement of the skin or the chest wall, which leads to its fixation, sometimes accompanied by axillary adenopathy (8,12). Nipple alterations are rare and only in 5 to 10% of cases retraction is observed of the same (11), with ulceration in 6% and secretion in 6 to 9%. This last symptom is of clinical relevance, since 57 to 75% of men with hematic secretion from the nipple have cancer and its appearance may be an indicator of non-invasive disease (8).

Risk factors

The etiology of breast cancer in men is unclear. The majority of those affected do not have associated risk factors; however, genetic, hormonal and environmental factors have been implicated in the pathogenesis (1,8). Some risk factors have been described, such as breast cancer in first degree relatives, previous benign lesions in the breast and irradiation in the thoracic wall (10).

An alteration in the hormonal balance with an excessive stimulation of estrogen have been associated with an elevated risk of breast cancer (9), this occurs in some testicular anomalies, such as undescended testis, congenital inguinal hernia, orchiectomy, orchitis, infertility (2,10) and Klinefelter syndrome. The risk of developing breast cancer in patients with Klinefelter syndrome is 20 to 50 times higher than in the general population (8). The hormonal imbalance that leads to increased estrogen and testosterone deficiency increases the risk of disease (8); obesity causes an imbalance between these two hormones, so men with a body mass index greater than 30 kg / m^2 have a high risk of developing breast cancer (2,4,13).

Chronic liver diseases, such as cirrhosis, chronic alcoholism, etc., can lead to a state of hyper-estrogenism and increase risk. Men who consume a lot of alcohol, more than 90 g per day, have six times more risk of developing breast cancer than those who consume little, less than 15 g per day (8). Occupational risk factors, such as exposure to magnetic field and ionizing radiation (4,8,11), have also been considered, especially those related to the treatment of Hodgkin's disease, radiotherapy and fluoroscopy (8). 15 and 20% of men with breast cancer have a family history of breast or ovarian cancer. 10% have genetic predisposition to mutations, more frequent with the BRCA2 gene, and less frequent with the BRCA1 gene (2,14), as well as with the genes PTEN, P53 and CHEK2 (8,14).

In men, breast cancer and the BRCA2 mutation are associated with a worse prognosis, 5-year survival of 28%, in contrast to 67% of those without mutation, and at an earlier age of presentation, on average 58 years (8).

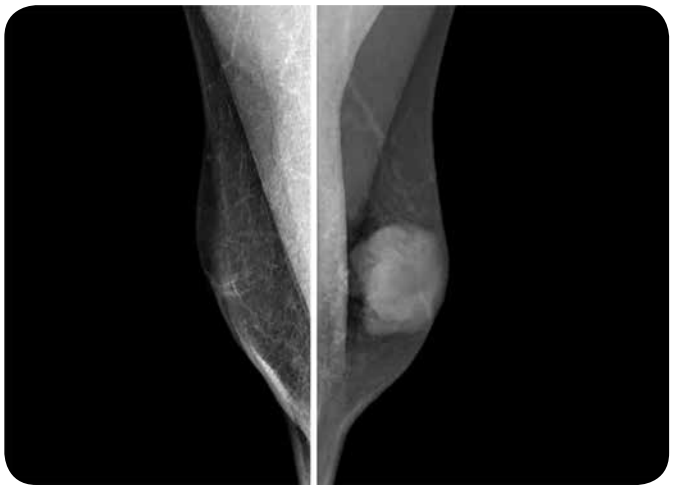

Figure 1. Bilateral mammography with axillary prolongation in oblique mid-lateral incidence (OML): oval nodule with circumscribed margins, with macrolobulations, no calcifications, retroareolar localization of 3.7 × 3 cm in transverse and anteroposterior diameter.

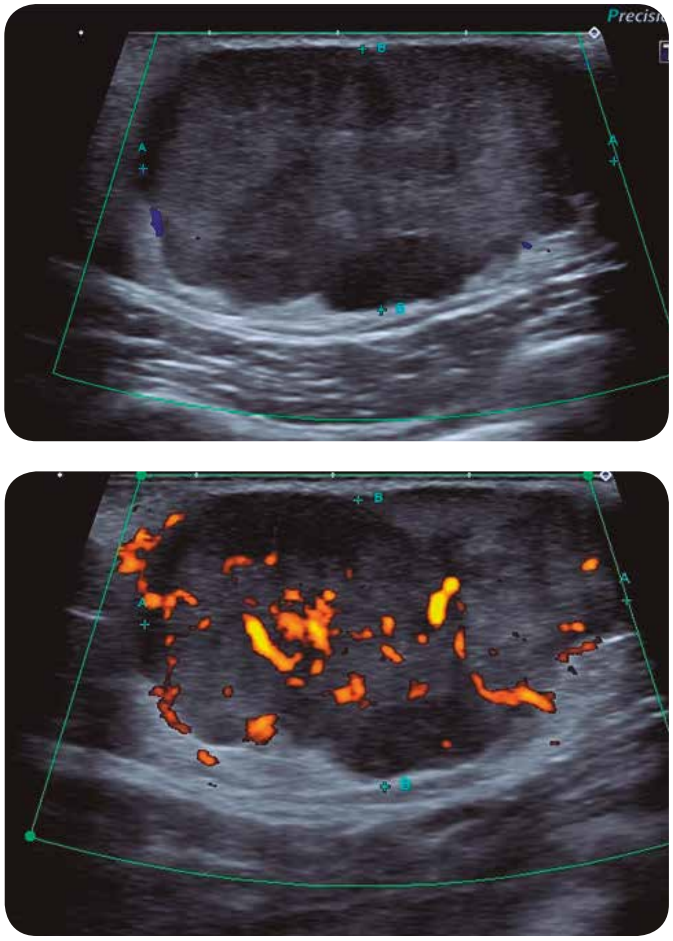

Figure 2. Ultrasound: nodular image, ovoid, with macrolobulations, hypoechoic, homogeneous, circumscribed, vascularized, without calcifications, located in the retroareolar region of the left breast, 3 × 7 cm in its major diameters.

Figure 3. Thoracoabdominal CT: evidence of adenopathies in the left axillary region.

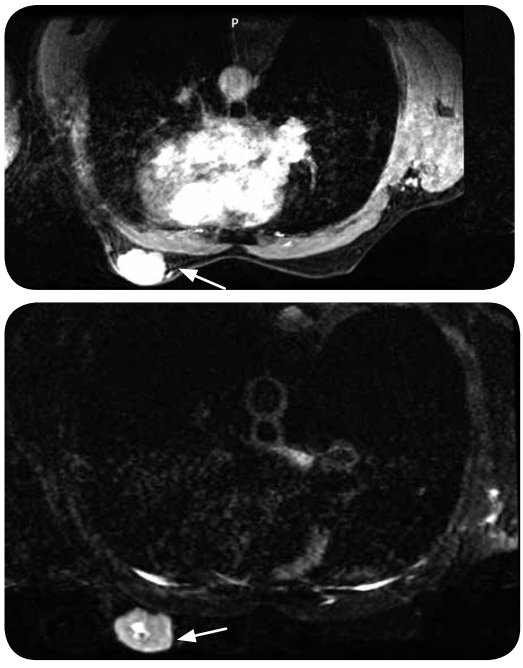

Figure 4. MRI: Retroareolar nodular image in the left breast of high signal with information T1 and T2 (arrows).

Risk factors for breast cancer in men are classified into three grades. High risk: hormonal imbalance, exposure to radiation, Klinefelter syndrome, BRCA2 gene mutation and family history of cancer. Those of low or moderate risk: occupational exposure to heat, obesity, mutation of the BRCA1 or CHEK2 gene. Those of uncertain risk: occupational exposure to vapors, exposure to magnetic fields, alcohol consumption, androgen receptor mutation and mutation of the CYP17 gene (5).

Diagnostic imaging

A Unlike women, who undergo screening studies, in man, diagnostic imaging studies are planned, since patients attend the clinic late because of the low incidence of cancer in men, due to the absence of early signs and symptoms, and the little knowledge of the existence of this pathology between patients and doctors (9,12).

Imaging studies are very useful in the differential diagnosis with benign lesions of the breast, such as: gynecomastia, unilateral hypertrophy, epidermal inclusion cysts, lipomas, fibroma, acute and tuberculous mastitis, lymphoma, sarcoma, hemangioma, metastatic tumors, myofibroblastoma, adenopathies. bruises, abscesses and papillomas, among others (11,13).

The diagnosis is based on clinical evaluation, mammography, ultrasound and biopsy.

Mammography: It is indicated in patients with clinical suspicion, or in patients with a personal history of breast cancer, a family history of breast cancer in men and mutations in the BRCA 2 gene (14).

The criteria of the ACR (Appropiateness Criteria Evaluation of the Symptomatic Male Breast) establish a different protocol for patients under 25 years, because only 6% of cancers occur in men under 40 years of age and 1% in men under 30 years of age; for this reason, the authors suggest that ultrasound is the imaging modality in young men; but if suspicious findings are observed, mammography should be performed. In those over 25 years of age, with palpable indeterminate or suspicious mammary mass, mammography is recommended as an initial imaging modality (15).

In men it has a high sensitivity of 92-100% and a specificity of 90% (2,10,13). Mammography is a useful tool to differentiate between breast cancer and gynecomastia (2,11). Most tumors are located eccentrically, outside the subareolar region (11,13); in gynecomastia, meanwhile, density is visualized centered on the nipple that extends in the form of a fan to the rear (11).

The limits of the lesion can be well defined, ill-defined or spiculated, and the shape rounded, oval or irregular, but lobulations are common (11,14).

Calcifications and microcalcifications are rare (14); when they appear, they tend to be coarse, round and scattered rather than grouped (13,14). Cutaneous calcifications are frequent in man and should not be confused with intracanalicular deposits.

Secondary signs can be visualized: cutaneous thickening, nipple retraction and axillary lymph nodes (11).

Ultrasound: The normal male breast is formed, mainly, by fat tissue, with few subareolar duct structures that line a prominent pectoral muscle. They appear as isoechoic fatty lobes that represent the subcutaneous adipose tissue, the pectoralis muscle is subjacent to the fat and the echogenic ligaments of Cooper are not observed (16).

The echographic findings are similar to those of breast cancer in women (2), the lesions are hypoechoic, with irregular borders, spiculated or lobed. The former may have posterior acoustic shadow and the latter posterior enhancement or isoechogenicity with variable shadow. In the case of intracystic carcinoma, it can be seen as a complex cyst with a solid component inside it (2,11). It must be borne in mind that sometimes the clinic is highly suggestive of cancer, and the images may suggest a benign appearance lesion; in the face of this controversy it will be necessary to perform a thick needle biopsy for histological confirmation; the same occurs with inconclusive and suspicious findings (unilateral gynecomastia, particularly nodular type) (11).

Mammograms combined with ultrasound may not be sufficient for the early detection of breast cancer in patients at increased risk due to family history or in patients with BRCA mutations, however, MRI has a higher sensitivity at a more favorable stage (14).

Biopsy: Regarding the histological variety, all the histological subtypes described in women can be presented in men (6).

Approximately 80-90% are invasive. Of these, 80% are ductal type (2,5-7,10). Ductal carcinoma in situ is extremely rare, although its incidence, especially in its papillary variety, is 5%, and it has increased thanks to the earlier diagnosis of the disease. Some cases of lobular carcinoma with 1% have also been described (6,10,12).

Because the breast in man contains only ductal tissue, the most frequent histological type is ductal carcinoma (1,4-6). 90% of these cancers have positive estrogen and progesterone receptors, which is why further management with tamoxifen is indicated (1). Most breast cancers are derived from the duct-lobular unit. Tumor cells can express progesterone, estrogen or HER-2 receptors. The state of the receptors is used, in addition to guiding medical therapy, to divide breast cancer into four molecular classes: triple negative (17), HER-2, luminal A and luminal B. Positive estrogen receptor tumors express hormone receptors and have a pattern that matches the luminal epithelial component of the mammary gland. There are two subtypes: luminal A and B. Luminal A has high expression of genes related to estrogen receptor (ER) and low expression of genes related to cell proliferation, compared to luminal B (18-20). Mammary carcinomas of luminal subtypes have a better prognosis compared with basal carcinoma and HER-2; type A shows higher survival and lower risk of relapse than luminal type B breast carcinomas. Triple negative breast tumors (without receptors) have a poor prognosis because they do not have many treatment options (14).

Biopsy is the only method to establish a definitive diagnosis of breast cancer and should be performed in all patients with irregular or asymmetric mass, discharge from the nipple, axillary adenopathy or mass adhered to the skin; Percutaneous biopsy is the method of choice (1). The types of biopsy and their indications are the same as in women. The thick needle biopsy is a diagnostic procedure that consists in obtaining transcutaneous breast tissue with needles of variable thickness in the form of cylinders, which are processed with conventional histological technique. Obtaining several tissue cylinders avoids open surgery and also provides sufficient material for the determination of immunohistochemical techniques, in order to establish prognostic and predictive tumor factors (21).

Fine-needle biopsy plays an important role in the rapid diagnosis of palpable mammary tumors and other palpable breast abnormalities. Although the test is operator-dependent and the false negative rate is high, it is a useful tool for diagnosis (14).

The histopathological categorization and the state of the recipients are of the utmost importance to guide the treatment. Sentinel lymph node biopsy is recommended in patients with tumors in the early stages, without clinical lymph node involvement, in order to avoid axillary dissection (14).

The small size of the male breast allows the tumor cells to reach the chest wall early (22). In ductal carcinoma in situ the cancer cells are in the ducts, but they do not advance to the fatty tissue; in invasive lobular carcinoma, malignant cells begin in the mammary lobules and invade fat cells; and in invasive ductal carcinoma, it invades the ducts and metastasizes to other parts of the body (23).

The procedure for staging should be based on a good clinical history, for which the tumor size, mobility, borders, attachment to the costal wall, skin involvement, axillary adenopathies, supraclavicular, a good thoracic semiology, evaluation of the liver are determined (22).

Due to its high sensitivity, mammography is the recommended modality of choice to further evaluate suspicious or indeterminate physical findings. When the mammographic record is abnormal, an objective ultrasound should be performed, and the ipsilateral lymph node chain should be examined (24).

Anteroposterior and lateral chest radiography should be performed routinely, looking for abnormalities that help assess pulmonary and cardiac function, cannula or interstitial metastasis (lymphangitic), pleural, mediastinal or bone involvement. To complement, complete blood count and liver profile should be performed; if the liver tests are altered, an imaging study of the liver in search of metastasis is required. Ultrasonography or hepatic tomography and bone scans should be performed selectively and only when metastatic disease is suspected.

The most frequent location of metastases is in lung and bone. Clinically, pulmonary involvement is manifested by dry cough and dyspnea, bone metastases due to pain and, occasionally, intense anemia indicating spinal involvement (24).

Treatment

Historically, the treatment of choice for breast cancer in men was radical mastectomy. Currently, as in women, more and more conservative surgeries are being attempted, such as modified radical mastectomy or simple mastectomy, supplemented with postoperative radiotherapy (7).

Forecast

In men, a history of breast cancer is associated with a 30-fold increased risk of developing contralateral breast cancer (8,14), a figure that exceeds the risk in women 2 to 4 times (8). There is a 21% chance of developing a malignancy in another site different from the breast; axillary metastasis is the strongest predictor of local and metastatic recurrence and appears in up to 50% of cases (14).

Ganglionar involvement with primary tumor in the breast is manifested in 50 to 60% of cases, lymph node metastasis with occult cancer appears in less than 1%. The involvement of the lymph nodes is more frequent in men than in women, and in them, the disease is diagnosed at a more advanced stage (8).

The prognosis in relation to the stages is similar to the disease in women, but in man it is diagnosed in more advanced stages, and especially at more advanced ages, therefore the prognosis of the disease is bad (13).

In 40% of men with breast cancer, the disease is discovered in advanced stage (III-IV) with fixation to the skin or muscle, due to the scarce breast tissue and the low index of suspicion. The five-year survival rates for stage I are 55 to 100%, in stage II, from 41 to 78%, for stage III, from 16 to 57%, and for stage IV, from 0 to 14% (8,22).

Conclusion

Breast cancer in men is rare; however, in recent years the incidence has increased. Among the risk factors are conditions that alter hormone levels, the family history of breast cancer and genetic mutations, among others. Men are diagnosed later than women because of the little knowledge of this pathology. Currently, mammography helps differentiate between benign and malignant mammary diseases in men, and its routine use can reduce the need for biopsy. However, it must be borne in mind that at times the clinic is highly suggestive of cancer, while the images show a lesion with a benign appearance; in these cases, confirmation by biopsy will be required. The prognosis is very similar to that of breast cancer in women. In the same way, the prognostic factors depend on the characteristics of the nodule, the size and the hormonal receptors, as well as the involvement of lymph nodes.

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