BREAST CANCER IN WOMEN UNDER 35 YEARS. CORRELATION OF RADIOLOGICAL AND PATHOLOGICAL FINDINGS. PRELIMINARY RESULTS

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OBJECTIVES

- To determine the incidence of breast cancer in women younger than 35 years treated in "Breast Clinic" of HEE.
  - Identify the different types of breast cancer that occurs in this age group.
  - Correlation of radiological findings and histopathological findings in this patient group.

ABSTRACT

We performed a prospective study to identify the initial incidence of breast cancer in women younger than 35 diagnosed in the Eugenio Espejo Hospital. The aim is to identify the different types of breast carcinoma occurring in this age group and correlate radiological findings and histopathological findings. The results show that 83.3% are ductal carcinoma with different degrees of severity, 72.2% of lesions are located in quadrant supero and external, the study identifies a mass mammography in 44.4% and with the same percentage the presence a focal asymmetry in the observed 38.8% microcalcifications, in the ultrasound study 94.4% of the lesions correspond to a hypoechoic mass, in 55.5% homogeneous, high-resistance Doppler study, 44.4% in the malignant lesions were associated with the presence of lymphadenopathy. Therefore, it is mentioned that the number of cases of breast cancer in young women is increasing, the diagnosis was usually performed in the presence of a mass, which disfavors the

KEYWORDS: breast cancer, young women, risk factors, mammography, ultrasound, pathology.

RESUMEN

Se realiza un estudio prospectivo inicial para identificar la incidencia del cáncer de mama en mujeres menores de 35 años diagnosticadas en el Hospital Eugenio Espejo. El objetivo es identificar los diferentes tipos de carcinoma de mama que se presenta en este grupo etario y correlacionar los hallazgos radiológicos con los resultados histopatológicos. Los resultados expresan que el 83.3% corresponde a carcinoma ductal con diferentes grados de severidad, el 72.2% de las lesiones se ubican en el Cuadrante Supero e externo, en el estudio mamográfico se identifica una masa en el 44.4% y con igual porcentaje la presencia de una asimetría focal, en el 38.8% se observa microcalcificaciones; en el estudio ecográfico el 94.4% de las lesiones corresponden a una masa hipoecogénica, en el 55.5% es homogénea y de alta resistencia al estudio doppler, En el 44.4% las lesiones malignas se asociaron a la presencia de adenomegalias. Por tanto, se menciona que el número de casos de cáncer de mama en mujeres jóvenes está en aumento, el diagnóstico se lo realiza generalmente ante la presencia de una masa, lo que desfavorece el pronóstico, por lo que se busca establecer nuevas estrategias de cribado y fomentar la prevención y diagnóstico temprano de esta patología.

PALABRAS CLAVE: cáncer de mama, mujeres jóvenes, mamografía, ecografía, patología.
INTRODUCCIÓN

Breast cancer is the abnormal growth of malignant cells in the breast tissue. Two main types of breast cancer and ductal carcinoma lobular (1).

It affects one in eight women during their lives. It has a high mortality in the United States after lung cancer. Although 65% to 70% of breast cancers occur in women 50 years or older, many younger women are diagnosed each year with malignant breast disease. (2).

Breast cancer is a public health problem worldwide and Ecuador therefore does not escape this reality. In the country, every year there are 1500 new cases.

In 1980, 6% of deaths in Ecuador was caused by , in 2009 this figure rose to 14%. National Registration tumors reported in 1990 in the case of breast cancer, the rates have increased from 20% in 1990 to 32% in 2009. Women 35 to 60 years are most affected. (3)

As residents of Quito in the statistics set out in the years 2003 - 2005, breast cancer (C50) corresponded to 35.6%,(Standardized incidence rate x 1000.000. (Source: National Tumor Registry SOLCA Quito), ranking second only to skin cancer (C44) with 36.5%.

In relation to breast cancer in young women mentioned that Mexico is the second most common cancer among women. Its frequency is from 0.56 to 21% among young women.

Age is considered a prognostic factor. The incidence of breast cancer in children under 35 years in a study conducted in 2002 was 5.33%. (5,6)

Among women younger than 35 years, the incidence of breast cancer is low, however, the evolution of the tumor is more aggressive, both by the delay in diagnosis and the biological behavior of the tumor. They have a greater number of nodes involved and receptor-negative, time to recurrence and shortened survival time seems to vary. (5, 7)

In our country ranks first in appearance, with a rate of 35.4 per 100 000 women over 40 years according to the National Tumor Registries Solca, data set standardized incidence rate per 100 thousand inhabitants in Quito and with national. (2002-2006). As for the statistics of breast cancer in young women established no clear statistics. (6.8)

Breast cancer in young women is often associated with some features: the tumor is usually larger, often more undifferentiated and be more aggressive. Up to 50% of these women have a family history of breast neoplasia (mothers, aunts, sisters, etc..) Versus 10% of older patients diagnosed with this disease. Other data associated with these girls is that they present more often (15%) gene mutations that affect the incidence of this cancer compared to the rest of an older age (3%). (1.9)

For these reasons establishing the importance of early detection of breast cancer and promote prevention through properly established and standardized programs to ensure the welfare of the patient.

MATERIALS AND METHODS

Mammography GE, RT VARIAN LPHA M113 SP, Mammography with incidence: Skull Caudal (CC), midlateral Oblique (MLO), Lateral 90 ° (90 ° L), compressions.

Mammography lilyum METALTRONICA STEREO ALPHA stereotactic equipment.

Stereotactic biopsy.

Ultrasound equipment brand GE Voluson 730 ProV with high resolution linear probe up to 13MHz. Using harmonic color Doppler, Power Doppler, Doppler spectral image enhancement with use of high frequencies, low densities, adequate number of pockets according to needs.

Eco biopsy: Automatic Pistol, PROMAG ® brand, MD TECH ® disposable. 14 gauge needle, 10cm. Coaxial to 13 gauge. Scalpel # 11. Sterile gloves, local anesthetic: lidocaina without epinephrine 2% (5cc) deep infiltration and subcutaneous. Asepsis and antisepsis: 10% povidone iodine, eye field, cleaning transducer and covered with condom collection container with formalin biopsy samples, swabs

Fine needle aspiration (FNA): Citoaspirador for 10cc syringe. 1 ¼ Needle, sterile gloves, extended plates FNA slides to be placed in a container with 99% alcohol
Philips 1.5T MRI: Magnetic Resonance Imaging (MRI) Philips 1.5 Tesla (T). Antenna breast. Coils dedicated 4-channel surface on T2 and T1 pre and post administration of paramagnetic contrast agent (gadolinium, 0.1 ml / kg) followed by 20cc. of saline and a speed of 2.5 seconds with subtractions. Courts of 5mm. Additional sequences T2 SPIR. 512 x 512 matrix. T2 TE: 90 msec, TR: 2090 msec. T1 TE: 30 msec, TR 530 msec. The dynamic study is analyzed on the basis of kinetic curves.

Negatoscope office supplies.

Immunohistochemical study.

Patients younger than 35 years presenting tumor breast lesion. Inclusion criteria: Patients treated in the HEE breast clinic, 35 years of age or younger, with full radiological and histopathological findings. Exclusion criteria: Patients undergoing surgery prior to diagnosis of breast Ca other health units do not own previous imaging studies.

The evaluation was performed by reviewing studies of breast for three experienced radiologists.

The present study is retrospective - prospective and shall be developed based on the history of patients who undergo imaging studies of the HEE Breast Clinic and the result is positive for malignancy, as well as detailing the different types of tumors found and their incidence of presentation. The data obtained are tabulated in the operating system Microsoft Excel and then will be analyzed using drafting tables and bar graphs and / or pastries and an appendix draw pictures in relation to breast cancer cases more representative and didactic this age group.

RESULTS
In the Eugenio Espejo Hospital of the city of Quito were reviewed medical records of 18 female patients younger than 35 years diagnosed with Breast Cancer Histopathology confirmed that obtained via ultrasound-guided biopsy in the period January 2011 to March 2012, being the following results.

In mammographic findings in relation to breast density according to the American College of Radiology (ACR) was classified to 8 mammograms (44%) and ACR 3, 7 mammograms (39%) and ACR 2, 2 mammograms (11%) and ACR 4 and 1 mammography (6%) as ACR 1. The presentation of breast cancer was mammography as a mass in 8 patients (44%) (Figure 10) as a focal asymmetry in 8 patients (44%) (Figure 1) and as a nodule in 2 patients remainder (11%) (Figure 1). As to the borders of the lesion were poorly defined edges 5 (28%), 4 indistinct borders, 3 spiculated margins (17%), 3 rounded edges (17%), 2 irregular edges (11%) and 1 lesion lobulated edges (6%) (Figure 2). Engagement relative to skin and nipple, 5 patients (28%) had thickened skin and nipple retraction. The axillary nodal involvement was demonstrated in 8 patients (44%). Pleomorphic microcalcifications occurred in 7 patients (39%).

In ultrasonography correlation mammographic findings demonstrated the presence of a mass in 17 patients (94%) (Figure 10) and complex cyst by one 1 patient (6%) (Figure 3). Found mass 8 had irregular edges (44%), 5 lobulated edges (28%), 4 regular edges (6%) and 1 lobed edges (22%) (Figure 4). Echostructure regarding the lesion 10 were homogeneous (56%) and 8 heterogeneous (44%) which includes the cystic lesion, the same irregular echogenic component introduced into the periphery. The total observed were hypoechoic lesions (100%). The color Doppler study showed that 16 masses (89%) were vascularized and 1 (6%) was avascular, the remaining lesion corresponded to complex cyst which showed no vascularity (6%), in the spectral study found that 10 of the mass (56%)
had a high resistance (Figure 9), 4 (22%) and average resistance 2 (11%) low resistance (Figure 5). Calcifications were observed through ultrasonography in 2 patients (11%).

Figure 3. Findings of Ca on ultrasound breast.

Figure 4. Edges ultrasound lesions.

Figure 5. Mass spectral study.

Mammographic and sonographic localization of the lesions described predominated in the upper outer quadrant (CSE) with a total of 13 patients (72%), the remainder were 2 patients with subareolar lesion (11%) and with equal frequency in number from 1 patient (6%) in Quadrant external Inferno (CIE), external Quadrants Union (UCE) and Upper Quadrants Union (UCS) (Figure 6).

Figure 6. Breast lesion localization.

1 (6%) of the breast cancer cases were observed in both radiological methods (mammography and ultrasound) multifocality injury. According to the BI-RADS classification, 7 patients (39%) were pigeonholed into the category IV B and another 7 in the category IV C, el remaining 4 patients (22%) were classified as BIRADS V. (Figure 7).

Figure 7. BI-RADS classification

Histopathology correlated with radiological findings showed that 16 patients (88%) developed ductal carcinoma with different degrees of severity, 1 patient (6%) adenoid cystic carcinoma and remaining patient (6%) undifferentiated malignant tumor (Figure 8).

Figure 8. Types of breast cancer
DISCUSSION:

Breast cancer is considered a systemic disease by the ability to metastasize, there is abnormal proliferation, disorganized epithelial cells of the mammary gland (ducts, lobules) and stromal lower frequency (10, 18, 21).

90% of breast tumors are epithelial them lobular carcinoma 10% and 90% ductal carcinoma, the remaining 10% corresponds to non-epithelial tumors such as supporting stromal tumors, angiosarcoma, primary sarcomas, philodes tumor, lymphoma (rare) (11, 19).

At the University of Costa Rica in 2010 a study was conducted to characterize raised invasive carcinomas of the breast in a cohort of 72 women under 50 years, diagnosed in 2006 in a health care capital tertiary in Costa Rica, where it was determined: The invasive carcinomas of the breast in women under age 50 account for 33% (n = 72) of the study population and were diagnosed mostly in a stage of advanced disease, the 73.21% (n = 41) of the tumors were equal or greater than 2 cm in diameter, 40.91% (n = 18) had axillary node metastases and 86.00% (n = 43) had a high histological grade (grade II or grade III), characteristics that predict a poor prognosis. Almost half of the cases was consistent with immunohistochemical subtype A and ductal carcinomas second triple negative constituted 22.22% (n = 16) of cases. Some authors suggest that these tumors may form a distinct biological entity, especially those that occur in women under 35 years (12, 13).

The results obtained in this study are consistent with international references as it demonstrates the predominance of ductal cancer in 88% of patients with varying degrees of severity.
On the other hand the extension of tumor lesion showed thickened skin of the breast and nipple retraction in 28% of patients. Nodal involvement was found in 44% of patients.

The main use of mammography is its ability to detect breast cancer before clinical manifestations, allowing a better prognosis when diagnosed at an earlier stage (14, 20).

In Spain in 2009 noted that ultrasound studies performed showed the predominance of negative tests (32.0%) and hypoechoic nodules (25.6%). Histological varieties in situ had the greatest percent of cases negative ultrasound, especially ductal (100%). In infiltrating ductal carcinoma hypoechoic nodule was found in 30.3%, while 27.7% showed no ultrasound abnormalities. For his part, infiltrating lobular ultrasound had its expression through a hypoechoic nodule in 85.7%, and 100% of inflammatory hypoechoic nodule was found. + + (15, 16).

It is noteworthy that the study population is for young women whose first diagnostic procedure according to international standards corresponded to ultrasound where it was established that the sonographic demonstration of ductal carcinoma was through a mass (94%) with irregular (44%) , homogeneous (56%), hypoechoic (100%), vascularized (89%) and high strength (56%).

The study showed the presence mammographic mass asymmetry and focal each by 44%, with ill-defined margins by 28% and presence of pleomorphic microcalcifications in 39%.

These results are very close to the reality of other countries.

According to the BI-RADS classification (Breast imaging reporting and data system), developed by the American College of Radiology, each category has clinical and therapeutic implications. (17) In our study, the categorization was defined in 39% of patients as BI-RADS IV equal percentage B and BI-RADS IV C, the remaining 22% were classified as BI-RADS V, which shows an accurate presumptive diagnosis around malignant breast lesions.

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