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THE ROLE OF STANDARD AND ADDITIONAL METHODS OF X-RAY DIAGNOSTIC DURING NONPALPIPATED BREAST FORMATIONS

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ABSTRACT

Mammography is the main method of research of the mammary glands, has a number of indisputable advantages. In patients with non-palpable mammary glands, the dependence of dense breast tissue on age, indirectly reflecting the physiological state of the female genital sphere, was revealed. According to the results of the analysis of mammography and ultrasound, the predictors for performing a biopsy were significant radiological signs of breast cancer. Newly identified microcalcifications in women of 49-51 years in premenopausal disease are associated with a high risk of developing breast cancer, which requires a biopsy.

KEYWORDS: Mammary gland tumors, breast cancer, diagnostic, mammography, biopsy, morphological study.

INTRODUCTION

To date, the diagnosis of non-palpable mammary gland tumors is an urgent problem, the solution of which is possible with a combination of clinical, radiological, and morphological research methods. Mammography is the main method of research of the mammary glands, has a number of indisputable advantages.[1,2] The sensitivity of this method is 60-80%, and the specificity is 36-80%. This method is not used in young due to low information content. Ultrasound with special Doppler techniques has a sensitivity of 82-93%, and a specificity of 59-96%. But this method is not highly informative with calcifications. Morphological verification, with a certainty of 98%, is carried out with any suspicious changes in the mammary glands.[3,4]

THE AIM OF THE STUDY

To analyze the capabilities of standard and additional research methods in the comprehensive diagnosis of non-palpable breast and early breast cancer.

MATERIAL AND METHODS

From 2012 to 2016, a standard mammography was performed in RSSPMCOR of the MH RUz, and in 470 (16%.) Patients, changes in the mammary glands were detected. In addition, the following methods were used: 100% lateral projection, 100% axillary projection, 25% aimed exposure. Images were evaluated according to the classification of BI-RADS. Puncture biopsy was performed for diagnostic purposes under ultrasound guidance in 470 patients. Of these, 150 underwent a cor-biopsy under ultrasound control. Ultrasound was performed using high-frequency sensors (7.5-9-12 MHz). Sectoral resection was performed in 200 women. At the same time, macroscopic fibroadenomas were found in 29%. cases in 25%. — sites of proliferation, cysts –10%., microcalcifications-25%, suspected breast cancer in 16%.

RESULTS

In patients with non-palpable mammary glands, the dependence of dense breast tissue on age, indirectly reflecting the physiological state of the female genital sphere, was revealed. Depending on the menstrual status, 3 age groups of women were allocated: Group I - 43-45 years, Group II - 46-48 years, Group III - 49-60 years. When analyzing the x-ray density of breast tissue, in different age groups, we found the prevalence of unfavorable types III / C and IY / D of the x-ray density of the breast tissue. Moreover, in women in group I in 66%, of them is 24.3%. The density was very high and corresponded to type IY / D, in 42% there was a very dense segment, which corresponded to III / C, which limited the sensitivity of standard mammography to 91%. The involutive A type of breast density prevailed at the age of 46–48 years in 54% and in 49 years – 60 years –77%. High-density mammary glands in 8.7% of the case revealed a lesion diagnosing ultrasound. Only with repeated research could it be revealed signs of dysarchitectonics. The distribution of benign and malignant tumors of the mammary glands also depended on age: the highest percentage of benign tumors were found in group I. The proportion of detected breast cancers among patients of group III was 6.5% higher, in group II, this figure was 46%, and in group III, 35%. With repeated mammographic examinations, the

percentage of early breast cancers was revealed with increasing age of the patients. In women in group II and in group III, identical data are observed 43% and 44%, respectively. And in group I, it exceeded the data five times, and the share of newly discovered lesions in the mammary gland was in group I, 27.4% in group II, 35.2% and group III, 7.8%.

Thus, we often diagnosed preclinical malignant lesions of the mammary gland in patients of the older group and with repeated screening mammography as newly diagnosed.

According to mammography and ultrasound imaging, non-palpable tumors were detected in the form of: mass lesions up to 15 mm in 63% of patients, local structural reorganization was observed in 12%, breast density asymmetry was observed in 7%, accumulation of microcalcifications was observed in 18%, and in 32% of lesions were ultrasound negative.

Reducing the informational content of the gamma graphic research has contributed to: high breast density - 37 women aged 40-45 years, lesion size in the mammary glands less than 5 mm, difficulty in visualizing asymmetric density, difficulty in interpreting and categorizing the newly identified dense structures. In 140 women, the presence of benign tumors was verified. Moreover, in 0.9% of cases false-negative results were obtained: the newly identified formations of the correct form with uneven contours and calcium inclusions were interpreted as intermediate. With short-term follow-up, there were signs of progression in the form of an increase in the size of the formation, the changes were found to be malignant, and in a morphological study, the result was consistent with breast cancer. This observation indicates a high risk of developing breast cancer with the first detected calcium inclusions and uneven contours, despite the correct shape. In 14% of cases, the lesions had a lobular shape and different contours, while 3% of them contained calcifications with goodness characteristics: in two cases by popcorn type, in 8 cases - central calcification, in 10 cases - by shell type, in 11 cases without calcifications. We also noted two false-positive results, which were first identified with polycyclic microcontours and small patches of calcinots, which were interpreted as suspicious. Of the 210 lesions, 28.7% of cases were identified in breast cancer verification. Thus, the interpretation of volumetric formations is based on the visualization of direct and indirect characteristics of good quality or malignancy according to mammography and ultrasound. Of the 150 non-lethal lesions, we analyzed the X-ray characteristics of the following changes in the mammary gland: 77 cases of microcalcifications, 49 cases of local reorganization and 20 asymmetries of the density of the breast parenchyma. It should be noted that the interpretation of data is very complex. This, in turn, is due to the polymorphism of pathological processes and the difficulty of visualizing these changes against the background of dense fibro-glandular structures of small size. The target images did not reveal signs of violation of the architectonics of the surrounding structures, which served as indirect evidence of their good quality. When ultrasound in 9 cases, cysts were visualized, and 17 lesions were negative. In 12 cases, when conducting an additional biopsy, local forms of mastopathy were verified. The remaining 3 cases were malignant. Of the 57 cases of lesions according to the type of microcalcinate, 16 women had breast cancer. In 26 women, an additional MSCT was performed, in which, besides the morphological characteristics of the malignancy, signs of breast cancer were confirmed.

DISCUSSION

According to the results of the analysis of mammography and ultrasound, the predictors for performing a biopsy were significant radiological signs of breast cancer.[5,6] X-ray patterns of breast cancer: for bulk lesions - unevenness, hardness, irregular shape, which amounted to 84%. For microcalcifications, the blurring of contours, pleomorphicity, which amounted to 97%. For non-uniformity of the parenchyma in the mammary gland, a dense center is revealed, which is 88%. Only with asymmetry, no reliable direct direct radiological signs of malignancy have been found. Their interpretation is based on the deformation of the architectonics of the surrounding stromal structures, taking into account the variability of the lesion during local compression and localization. In the newly diagnosed lesions without pathognomonic x-ray signs of malignancy, according to our study, in 90% of cases, after interpreting additional images and a follow-up 6 month follow-up, a benign diagnosis was confirmed. Newly identified lesions have a high risk (35%) of breast cancer, especially of the type of microcalcinate in women aged 49-51 years. Changes of this kind should be regarded as the risk of breast cancer, with mandatory morphological verification.

CONCLUSIONS

High and heterogeneous X-ray diagnostics of breast tissue density in pre-menopausal women reduces the informativity of mammography.[7,8] In such patients, the diagnostic algorithm should include the mandatory use of additional mammography and ultrasound techniques. For high-type breast cancer or for questionable results, it is advisable to use MRI-Mg with contrast (Gadolinium) or MRI. Ultrasonic negativity of lesions makes their interpretation difficult. The diagnostic algorithm should include the mandatory use of additional MRI techniques with contrast (Gadolinium) or MR, the use of which increases the effectiveness of screening, contributes to the correct categorization of lesions, which reduces the level of unreasonable biopsies by 11%. Predictors for biopsy in the presence of non-palpable breast tumors are: fuzzy contours and irregular forms of formation, pleomorphism, cluster distribution of microcalcifications, discrepancy between qualitative morphological characteristics, signs of progression. For the first time, the identified lesions with patches of women in premenopausal women should be categorized

with the risk of breast cancer from 2-90%, with the need for morphological verification. Newly identified microcalcifications in women of 49-51 years in premenopausal disease are associated with a high risk of developing breast cancer, which requires a biopsy.

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