

IMPROVEMENT OF ULTRASOUND DIAGNOSTICS OF BREAST BENIGN TUMORS

Nasriddinova S. Z.

Gofurova X. Z.

Madumarova Z. Sh.

Department of Medical Radiology
Andijan State Medical Institute

Abstract:

The analysis of data from foreign and domestic articles published over the past 10 years on the problems of instrumental diagnosis of benign diseases of the mammary glands (BDMG). The possibilities of ultrasound X-ray mammography and magnetic resonance imaging in the differential diagnosis of various forms of BDMG and breast cancer are described. The importance of using the BI—RADS system in describing the results of radiation methods for diagnosing breast diseases is shown.

Keywords: benign diseases of the mammary glands, radiation diagnostic methods.

Introduction

At present, the issues of early detection and differentiation of breast tumors are relevant due to the high morbidity and mortality of the female population. Breast diseases are diagnosed in every fourth woman under the age of 30 and in 60% of older women; only the diffuse form of fibrocystic mastopathy (FCM) affects from 50 to 95% of women.

Ultrasound is the main diagnostic method that allows you to diagnose the structural features of the structure of the cystic component. Breast cysts are classified into simple, complicated and complex. A complicated cyst differs from a simple cyst by the presence of echogenic homogeneous content, and a complex cyst is heterogeneous: it has both cystic and solid components.

The use of the BI-RADS H category (probably benign neoplasm) is usually limited to a single solid oval-shaped formation with clear contours and parallel orientation (most often a fibroadenoma), isolated complicated cyst and cluster microcysts. The latter are cystic dilatation of individual acinuses and are one of the benign cystic changes in the breast. According to ultrasound, cluster cysts are a well-defined formation consisting of many small cysts separated by thin septa (less than 0.5).

With a typical manifestation on ultrasound, cluster microcysts can be attributed to BI-RADS 2. However, in deep locations or in cases where it is difficult to adequately characterize cluster cysts, BI-RADS 3 can be evaluated in postmenopausal women with new microcysts. Cystic lesions with a solid complete component should be classified as BI-

RADS 4 if there is no evidence of the etiology of the solid component (e.g., blood clot after aspiration biopsy).

Objective

To study and evaluate the results of the ultrasound method of examination of benign breast tumors.

Materials and methods of research. The reference standard of study was defined as a combination of histological examination and a 12-month interval for re-examination and was available for 2662 women. Over a three-year period from 2017 to 2020, these patients underwent three annual independent sessions with mammography and ultrasound in a randomized manner, 703 women from 14 centers agreed to undergo one MRI study. the frequency of detection of images, the sensitivity and specificity of ultrasound, mammography and MRI, the positive prognostic value of the biopsies performed, the interval frequency of formations.

Results of the study

The results of these two studies were evaluated by two independent experts who did not know the results of the other screening. At the same time, the detection rate of lesions with ultrasound screening was higher than with mammography alone, and the prognostic value of the biopsy was higher with both diagnostic methods. Of the 2662 participants, 519 (19.5%) had 745 lesions of BI-RADS category 3, 124 (16'6%) of them were biopsied. Histological examination of biopsies of BIRADS 3 lesions revealed benign cystic lesions in every 3 cases — 31.1%, fibrosis and fibrocystic mastopathy in 22.6%, fibroadenomas — 20.2%, fatty necrosis — 11.3%, malignant neoplasms — 4%, sclerosing adenosis — 3.2%, benign papillary lesions — 3.2%, other changes — 3.2%. It is important that the incidence of cancer according to biopsy data of layered cysts with a cystic solid structure, thick walls and septa, intracystic formations reaches 36%. According to the three-year ACRIN 6666 experience, cluster microcysts were malignant in 0.8% of cases.

Thus, ultrasound examination is a priority in the diagnosis of cystic changes in the breast, and the use of modern BI-RADS terminology is an effective tool in determining the tactics of patient management. The ultrasound picture of focal mastopathy deserves special attention. In half of the cases (46.6%), focal PCM was visualized on ultrasound as a solid formation in the form of heterogeneous echogenic tissue (15%), in the form of cysts (13.3%), and in every fourth woman (25%) – no focal change was observed. Ultrasound signs are not specific enough to differentiate the dominant component: focal fibrosis, sclerosing adenosis, or PCM. Thus, focal mastopathy requires additional techniques that increase the sensitivity and specificity of the examination.

Inference. Thus, the sensitivity of the complex ultrasound method was 97.6%, specificity 86%, accuracy 96.3%. The introduction of the system of interpretation and recording of breast ultrasound results according to the BI-RADS scale into the daily practice of an ultrasound diagnostics doctor will make it possible to systematize the results obtained,

determine the tactics of optimal further examination and management of patients with breast neoplasms, and ensure the continuity of therapeutic and diagnostic measures.

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