



The problem of breast cancer diagnosis
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Abstract

In the structure of cancer incidence among the female population, breast cancer (breast cancer) takes the first place. The incidence in our country is uneven. There has been a steady increase in the number of patients and an increase in mortality rates [3]. The Russian Federation has defined a strategy to combat this pathology, which is focused on reducing mortality, increasing the disease-free period and improving the quality of life of patients. However, even with an optimistic prognosis of the course of the disease, there is a number of problems associated with breast cancer. The major psychological and social stressors under these circumstances are related to the woman's understanding of her disease, its prognosis, the complexity of treatment.

Keywords: Breast cancer, method of treatment;

1. Introduction

Currently, the incidents of cancer are growing every year, despite the constant development of medicine and preventive measures. Breast cancer is one of the most common malignant diseases in women. In 2015, 66 366 new cases were registered in the Russian Federation, which makes up 20.8% of the total tumor pathology in women.

The average age of patients was 61.2 years. The annual standardized incidence rate growth rate was 1.8% over the past 10 years. In recent years, the number of patients in whom the disease is diagnosed at stages I – II has been increasing. Thus in 2015, this figure was 69.5%, while 10 years ago it was 61.8%. Mortality in the first year after diagnosis is reduced over ten years from 10.9% in 2005 [1, 2].

The purpose of this article was to assess the problem of breast cancer and to highlight the main aspects of the problem of this cancer.

2. The problem of breast cancer

Breast cancer is one of the urgent medical and socio-hygienic problems of modern science—both oncology and public health in general, due to the prevalence and difficult psychological aspects associated with problems of social adaptation. More than 1.3 million cases of the disease are registered annually in the world. This form of the tumor belongs to those cancers, among which,

over the past decades, the incidence rates of incidence rates have remained in both developed (1.0–2.0% per year) and developing countries [4].

Currently, there are a number of preventive and diagnostic studies, surgical interventions, with which it is possible to identify and treat this disease.

One of the most reliable and early signs of cancer is the presence of microcalcifications, which are a reflection of the deposition of salts in the duct wall. Sometimes microcalcifications are the only radiological manifestation of early breast cancer. Usually microcalcifications are small-cell in nature, resembling grains of sand. The more they are and the smaller they are, the greater the likelihood of cancer. Microcalcifications can also occur with mastopathy and even normal, however, their nature is significantly different from the above: they are few, they are much larger, more shapeless and clumpy.

Secondary (indirect) radiological signs include symptoms from the skin, nipple, surrounding breast tissue, increased vascularization, etc.

Despite the effectiveness of the X-ray method, the resolution of mammography in a number of patients decreases sharply: with severe diffuse forms of mastopathy, in young patients with dense mammary glands, with implants, severe inflammatory changes, swelling of the gland and background diseases such as fibroadenomatosis. In this case, a suitable imaging method is ultrasound of the mammary glands. Ultrasound is an absolutely harmless research method, which allows doctors to use it repeatedly in the process of monitoring and screening. With ultrasound, the tumor is detected in the form of a hyperechoic zone of a round shape with uneven contours. However, in its own form, ultrasound has a relatively low information content, especially with minimal tumor sizes, therefore, it should be used in combination with other diagnostic methods, especially in young women with dense.

A highly informative and rapidly developing diagnostic method is a radioisotope study of the mammary glands - scintimammography. The method is based on the selective ability of the radiopharmaceutical ^{99m}Tc -SestaMIBI and its derivatives to accumulate in amounts higher in comparison with healthy tissues in malignant tumors, and the concentration of the radiopharmaceutical is the same in primary tumors and in regional metastases. With scintimammograms, it is possible to detect non-palpable tumors, multicentric growth, small tumors, and it is also possible to simultaneously identify regional metastases.

Recently, the method of microwave radio thermal scanning (microwave RTS) of the mammary glands has been very widely used, based on an assessment of the temperature gradient of the tissue at a depth of 7-14 cm in the decimeter wavelength range. In the diagnostic pathological picture, the focus is not a quantitative ratio of normal and pathological tissue, but on qualitative changes, due to which there is a change in the temperature difference associated with the formation of a new vascular network, increased metabolic metabolism in malignant neoplasms. In malignant tumors, the integral temperature rises sharply and significantly differs from that in benign tumors and dishormonal hyperplasias.

Such research methods as infrared thermography of the mammary glands, isotope diagnostics using radioactive phosphorus ^{32}P , direct color lymphography, radioisotope lymphoscintigraphy, diaphanoscopy of the mammary glands were not widely used due to the relatively low diagnostic efficiency.

And, the final stage of the clarifying diagnosis is a morphological study. Morphological verification of cancer is necessary for any suspected malignant process in the mammary gland. Material for cytological examination is obtained by puncture of the tumor, discharge from the nipple, scraping from the nipple for Paget's cancer (Paget's cancer is cancer of the nipple and / or areola of the breast. The formation occurs in the ducts, but is localized inside the nipple. The tumor

is non-invasive. In most cases, nipple cancer affects one gland. Paget's cancer is sometimes diagnosed in men. As a rule, in men, nipple cancer has an aggressive course). Cytological examination allows specialists to verify the diagnosis in 90% of patients. However, in 1.5–9.6% of cases, errors in cytological diagnostics are noted. Then a histological examination is used, the material for which is obtained by trepanobiopsy of a tumor or sectoral resection of the mammary gland. This is the most accurate method for diagnosing breast cancer. In almost all clinics, histological examination most accurately verifies the true nature of the disease.

As a rule, persons with a nodal form of mastopathy are subjected to surgical treatment, which is not amenable to conservative treatment and has a number of symptoms that preclude their observation in dynamics. This requires certain material expenses, both from the state and the patient, in particular. When a diagnosis is made for more than 2 stages of cancer, the patient's material costs grow exponentially, for the commonplace reason: free research, relying on the state, takes time, which the patient simply does not have.

Having a family history of breast cancer increases the risk by two to three times. Some mutations, especially BRCA1, BRCA2 and p53, lead to an extremely high risk of developing breast cancer. However, such mutations rarely occur, and they account for a small proportion of the total number of cases of breast cancer. That is, one of the main factors in the formation of cancer is age and lifestyle. The mammary gland is a hormone-dependent organ. Both its normal development and the occurrence of pathological changes in it occur under the influence of certain hormones. Any factors that can cause deviations in the hormonal balance of a woman can increase the risk of developing breast cancer.

Malignant breast tumors occupy a leading position in determining the level of temporary and permanent disability, reduce the average life expectancy of the female population, cause irreparable economic damage to society. The untimely diagnosis of breast cancer, a large share of the common stages of the disease with metastases (40.7%), high one-year mortality (up to 12%) determine the importance of measures for the prevention and early diagnosis of this disease - the identification of pre-tumor and tumor pathology of the breast in the early stages diseases for their timely treatment. In addition to the enormous economic damage, breast cancer is also social in nature.

It is known that women are more sensitive and vulnerable in relationships between close people, so the presence of support from a loved one during a period of poor health is especially important for her. In addition, loneliness is one of the factors contributing to the strengthening of neuropsychic and emotional breakdowns in women. A study of the marital status of women showed that in the main and control groups, most women are married (49.2% and 56.8%, respectively). Unmarried women, never married, in both groups of observations were distributed almost equally, making up 30.0% and 28.7%, respectively. At the same time, it was noted that divorced women in the main group compared with the background group turned out to be 1.4 times more (20.8% versus 14.5%). The study confirmed that the occurrence of cancer in women affects the change in marital status, leading to divorces. So out of 20.8% of divorced women with breast cancer, every third of them divorced after the diagnosis of breast cancer [3].

3. Conclusions

Thus, breast cancer for women is an urgent problem from all aspects of life: social, material, personal. At the scale of the state as a whole, it is economic. With the prevention and early diagnosis of breast cancer, many problems can be avoided, and most importantly, if the disease is identified at the initial stage, it gives great chances for a full recovery, as well as time, which is not present at a later stage of the disease.

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