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IMPROVING EDUCATIONAL EFFECTIVENESS IN TEACHING RADIONUCLIDE-NEGATIVE BREAST CANCER THROUGH COMPREHENSIVE RADIODIAGNOSIS

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Abstract: This article analyzes the factors that cause breast cancer, the importance of complex radiological and ultrasound methods in early diagnosis and comparative diagnosis of dangerous and safe tumor diseases of the breast, and the issues of teaching students and demonstrating in practice the analysis of examination results.

Keywords: Radionegative SBS, breast, ultrasonography, mammography, MRI, medical education and practice, differential diagnosis, educational effectiveness

Introduction: Breast cancer is one of the most common and widespread tumor diseases among women. Scientists have determined that SBS is more common in women over 50 years old, have a genetic disease, drink a lot of alcohol, have not had children, have taken hormonal drugs for more than 1 year, and have been exposed to radiation. Early detection of breast cancer is of crucial importance in modern oncology. However, radionegative cases pose great diagnostic difficulties. Radionegative breast cancer (RN-SBC) is a pathological condition that is not detected on a regular mammogram but is confirmed by other examinations, and it often occurs in women with dense breast tissue.

Studies have shown that the sensitivity of mammography decreases to 50% in dense tissue. This reduces the possibility of early detection of the disease and delays its clinical presentation. In cases of RN-SBC, many patients have a false negative result, which means that the disease is not detected until it is at a late stage.

It is in such cases that an expanded diagnostic approach - the use of complex radiodiagnostic (CNT) methods - becomes of great importance. This approach is relevant both for clinical decision-making and for teaching complex cases in education.

Breast Cancer (BCC) According to WHO, 25% of all women worldwide are diagnosed with breast cancer. In 2022, this disease was diagnosed in 2 million women and 627,000 deaths were observed. This oncological process affects not only women, but also men, but much less often than women. According to data, 6-12 men are diagnosed in Uzbekistan every year. BCC is more common in women aged 20 to 80, after 40 years the risk of developing breast cancer is 5-8 times higher than at the age of 60. Risk factors for the development of breast

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cancer include obesity, diabetes, hypertension, lack of physical activity, alcoholism, radiation therapy for breast cancer, low breastfeeding, giving birth to the first child after the age of 30, and hormone therapy after menopause. That is, the risk of developing breast cancer is associated with impaired functioning of hormone-producing organs.

Materials and research methods

Research methodology: Today, the leading methods for diagnosing breast cancer include X-ray mammography, ultrasound, Doppler function, MRI, and ultrasound-guided puncture biopsy, etc.

UTT examination is also used as an independent method for detecting tumors in combination with mammography. Ultrasound examination clearly visualizes tissues of different densities and anatomical structures in the breast.

In addition, the advantages of this method are the absence of radiation exposure to the patient's body and the possibility of repeated use of this method, which is considered a safe method, especially in cases where X-ray mammography is limited, for example, during pregnancy and lactation. According to studies conducted by Ivanov L.I., ultrasound is a highly informative method for diagnosing SBS with a sensitivity of 92.3%, specificity of 84.1% and diagnostic efficiency of 88.9%.

Mammography plays a significant role in the early detection of SBS, and it was found that this method of examination provides 80% of accurate information in cancer. It was found that this method of examination is of great importance in the early detection and prevention of not only cancer, but also precancerous diseases.

In many countries, mammography is the primary method used to diagnose breast diseases. Mammography has several important advantages that make it an important tool for diagnosing breast diseases:

Sensitivity to nodes: mammography is good at detecting nodules and other changes in the mammary glands, which allows for early detection of cancer and precancerous lesions.

Research objective; To determine the diagnostic value of tumor detection in radionegative tumors using complex radiological and ultrasound methods. And to develop methods for teaching students

Main part

In the origin of SBS, the pituitary gland, thyroid gland and ovaries are of particular importance. Another factor that increases the risk of cancer is that the presence of SBS in the mother increases the risk of breast cancer in the offspring. In this, gene mutations BRCA1 and BRCA2 are important.

The first signs of breast cancer are breast swelling, discoloration of the skin around the breast and around it, nipple retraction, colorless fluid or blood discharge from the nipple, and enlargement of peripheral lymph nodes.

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SBS occurs in 4 stages

1st stage - the size of the tumor does not exceed 2 cm. Metastasis is not observed in the lymph nodes

2nd stage - the tumor is 2-5 cm in diameter, the lymph nodes under the armpit are affected by the tumor. Lymph node involvement is observed

Stage 3 is divided into 2 stages

Stage 3A - the diameter of the tumor is more than 5 cm, the lymph nodes are very enlarged, they are attached to each other and to the surrounding tissues.

3B - at this stage, redness of the skin, the appearance of "orange peel", the tumor may be of different sizes. At this stage, the skin of the chest, internal mammary lymph nodes or chest wall are affected.

Stage 4 - the tumor reaches all lymph nodes and the spleen, liver, lungs, brain are also affected by metastases.

More than 60% of people with SBS can detect such a lump by palpation. However, since this method is not so effective, early detection of breast cancer is carried out by mammography.

Diagnosis of SBS includes mammography, ultrasound, MRI and CT, analysis of CA15-3 oncomarkers in the blood, ultrasound examination of abdominal organs, lymph nodes, biopsy, ductography, immunohistochemical examination. Mammogram takes pictures of the entire breast. With this method, changes in the breast of any nature are visible. For preventive purposes, it is recommended to undergo a mammography examination every year after the age of 45.

UTT examination is an independent method of detecting tumors, and is used in conjunction with mammography. Ultrasound examination clearly visualizes tissues of different densities and anatomical structures in the breast.

Another examination, MRI, is used to accurately diagnose SBS, but this method is more expensive than other methods. In this method, changes in the mammary gland tissue are visible with high accuracy. In some cases, in the diagnosis of SBS, it is possible to make an accurate diagnosis even without the use of a contrast agent. However, the MRI method also depends on the period of the menstrual cycle when it is performed, and this can lead to inaccurate information. According to a number of authors, X-ray negative breast cancer occurs in 15-40% of cases, thereby reducing the effectiveness of mammographic screening. Thus, it has been shown that the sensitivity of mammography in women of different ages decreases by up to 53%. The formation of visual skills in diagnostics plays an important role in the clinical training of students in higher medical education institutions. Teaching complex diagnostic cases such as X-ray negative breast cancer requires a high level of professional competence and the use of modern methods from the teacher.

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Teaching based on clinical case studies: Students are given tasks to analyze multimodal images (MRI, UTT, PET) based on real disease histories associated with RN-SBS.

Using simulation technologies: A virtual diagnostic environment is created using special radiological programs, in which students evaluate tissues in artificial conditions.

Transdisciplinary approach: By integrating radiology, oncology, and pathology, students not only learn imaging but also clinical decision-making.

This approach prepares students to identify and select appropriate diagnostic strategies for diagnostically complex diseases such as RN-SBS. As a result, the effectiveness of the learning process increases, i.e. theoretical knowledge is transformed into practical competence.

Conclusion

Radionegative breast cancer is one of the conditions with low sensitivity in medical practice, and it is not enough to rely on mammography alone to detect it. Complex radiological diagnostic methods - ultrasound, MRI, PET and digital tomosynthesis - are highly effective in detecting RN-SBS cases.

By integrating these technologies into the medical education process, students will acquire the skills to deeply study complex diagnostic cases, form clinical thinking and make independent decisions. The results of practical studies have proven that this approach increases the real educational effectiveness of this approach.

Recommendations:

1. It is necessary to include separate practical classes dedicated to complex radiological diagnostic methods in radiology courses of higher medical education institutions.

2. Interactive simulators and methods based on real clinical case analysis should be widely introduced in teaching visual diagnostics.

3. Young specialists can be better prepared for practice by teaching special clinical protocols for RN-SBS.

4. Strengthen interdisciplinary integration in medical education - it is necessary to harmonize the disciplines of oncology, pathomorphology, and radiodiagnostics.

References:

1. American Cancer Society. Breast Cancer Facts & Figures 2023. Atlanta: American Cancer Society, Inc.
2. Berg WA. "Tailored supplemental screening for breast cancer: what now and what next?" AJR Am J Roentgenol. 2022.

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INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

3. Mann RM, Balleyguier C, et al. "Breast MRI: EUSOBI recommendations for women's information." European Radiology, 2023.
4. Gulsun M, Demirkazik FB, Ariyurek M. "Evaluation of breast masses: comparison of mammography, sonography, and contrast-enhanced MRI." Clinical Imaging, 2022.
5. Radiologiya va onkologiya asoslari, o‘quv qo‘llanma. Toshkent tibbiyot nashriyoti, 2021.
6. O‘zbekiston Respublikasi Sog‘liqni Saqlash Vazirligi. “Onkologik kasalliklar diagnostikasining klinik protokollari”, 2023.
7. Yurtdashova G.M., Nurmatova N.K. "Vizual diagnostika bo‘yicha zamonaviy yondashuvlar." Tibbiyotda innovatsiyalar, 2024.

8. Декхкамбаева, З. (2024). Zamonaviy ta'limni jismoniy tarbiya va sport vositasida takomillashtirish. *Наука и инновации*, *1*(1), 70-7

9.Zulfiya, D. (2022). SOG ‘LOM TURMUSH TARZINI SHAKLLANTIRISHDA SOG ‘LOMLASHTIRUVCI TEXNOLOGIYALAR. *Новости образования: исследование в XXI веке*, *1*(5), 697-700.