

ONMedU, Department of Obstetrics and Gynecology.
Practical lesson No. 1. "Clinical examination of mammary glands ".

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MINISTRY OF HEALTH OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

Faculty international

Department of Obstetrics and Gynecology



CONFIRMED by:
Vice-rector for scientific and pedagogical work
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29 August 2024

**METHODOLOGICAL RECOMMENDATIONS FOR THE PRACTICAL
LESSON FROM ELECTIVE DISCIPLINE**

Faculty international, 5th year

**Elective discipline «SIMULATION TRAINING IN OBSTETRICS AND
GYNECOLOGY».**

Practical lesson No. 1. "Clinical examination of mammary glands ".

Methodical recommendations of a practical lesson, EPP "Medicine", 5th year, Faculty international. Elective discipline " Simulation training in obstetrics and gynecology".

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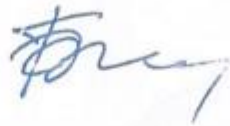
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Approved

Meeting of the Department of Obstetrics and Gynecology
Odessa National Medical University

Protocol No. 1 of August 29, 2024.

Head of the Department



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Practical lesson №1

Topic: "Clinical examination of mammary glands".

Goal. Learn the algorithm of clinical examination of mammary glands. Master the practical skills of mammary gland palpation. Be able to draw up an examination algorithm depending on the woman's age, complaints and medical history. to be able to interpret the results of ultrasound and X-ray examination of mammary glands.

Basic concepts: types of clinical examination of mammary glands, technique of palpation of mammary glands. Indications for ultrasound examination of the breast and mammography. Benign and malignant mammary gland formations. Classification of BI-RADS .

Equipment: Professional algorithms, structural and logical schemes, tables, models, video materials, results of laboratory and instrumental exam, situational tasks, patients, clinical cases.

EDUCATIONAL TIME – 4 h

1. Organizational events (greetings, checking those present, announcing the topic, the purpose of the lesson, motivating students to study the topic).

Breast cancer is a malignant tumor of the glandular tissue of the breast. This is the most common form of cancer in women. The number of breast cancer cases is increasing every year.

About half a million women around the world die from this disease every year. In 2020, 12,824 new cases of breast cancer were recorded in Ukraine, of which 88 were men, the rest were women. Early diagnosis, i.e. at stage 1-2 of the disease, increases the chances of a full recovery with significantly less effort. However, when the disease is in stage 3 or 4, the treatment is more aggressive, the process is much longer. Every fourth woman is diagnosed with breast cancer already at the III-IV stage, when the effectiveness of treatment is significantly reduced.

It is worth noting that the statistics of recent years indicate that the percentage of people who are cured of breast cancer is increasing. Mortality is reduced thanks to early diagnosis and the optimal method of using complex therapy.

2. Control of the reference level of knowledge (written work, written test, online test, interviewed, etc.).

Requirements for students' theoretical readiness to perform practical classes (knowledge requirements, list of didactic units).

- Knowledge requirements:
- Communication and clinical patient examination skills.

- The ability to determine the list of necessary clinical and laboratory and instrumental studies and evaluate their results.
- Ability to establish a preliminary and clinical diagnosis of the disease
- Perform medical manipulations
- Ability to keep medical records

List of didactic units:

- Types of clinical breast exam
- Algorithm of palpation of mammary gland
- Breast-self exam
- Benign and malignant tumor of mammary glands.
- Ultrasound exam of mammary glands.
- X-Ray exam of mammary glands .
- Management of benign formations of the mammary gland
- Management of malignant neoplasms of the mammary gland .

Questions (test tasks, problems, clinical situations) to check basic knowledge on the subject of the lesson.

Questions:

1. Clinical anatomy of the mammary gland
2. Classification of benign formations of the mammary gland.
3. Classification of breast cancer.
4. Changes in the mammary gland during pregnancy and lactation.
5. Methods of examination and diagnosis of breast neoplasms.
6. Modern management of women with breast pathology.

Situational tasks

1. A 65-year-old female is being evaluated for rapidly progressive erythema, swelling, induration, and warmth of her left breast. The patient denies fever, chills, or nausea. Her past medical history is significant for well-controlled hypertension, diabetes mellitus type 2, and hypothyroidism, for which she takes amlodipine, insulin, and levothyroxine. She is up-to-date on age-appropriate cancer screening under the care of her primary provider. On physical examination, the left breast is larger than the right. The overlying skin is thickened, and the left breast appears engorged. There is no palpable lump or regional lymphadenopathy. The patient has no family history of breast cancer. What is the best next step in the management of this patient?

Answer. Bilateral mammography.

This patient's findings are concerning for inflammatory breast cancer.

The best next step is to order bilateral mammography, followed by an ultrasound.

If radiological findings correspond to inflammatory breast cancer findings, the next step would be surgical consultation.

Bacterial mastitis generally affects women who are lactating. It may also develop in patients following nipple piercing. Patients typically present with fever, and the overlying skin of the breast is thin, edematous, and erythematous.

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.).

— Content of tasks (tasks, clinical situations, etc.).

Interactive task:

The students of the group are divided into 3 subgroups of 4-5 people each. We work in women's consultation rooms with gynecological patients, we give tasks: And the subgroup - to make a preliminary diagnosis.

Subgroup II – to draw up a management plan for a gynecological patient.

Subgroup III – evaluates the correctness of the answer of subgroups I and II and makes its corrections.

— Recommendations (instructions) for performing tasks (professional algorithms, orienting maps for the formation of practical skills and abilities, etc.).

Introduction

In women, breast cancer is number one in incidence and mortality when compared to all cancers. It is the most common non-skin cancer and second deadliest cancer in women. In theory, diagnosing early-stage tumors should reduce mortality; however, it is critical to incorporate lead-time bias. The issue of concern is to determine who should be screened. There could be some slow-growing tumors that do not become clinically evident during the patient's life. Therefore, risk stratification, the age to begin screening, and the age to stop screening are critical for the appropriate screening of breast cancer. More recently, rather than focusing on the size and extent of a tumor to guide therapy, the focus has been on determining biological characteristics that can help guide the prognosis and plan.

The methods of screening are:

- Breast palpation may be done by clinical breast examination and breast self-examination.
- Breast imaging techniques such as mammography, ultrasonography, magnetic resonance imaging (MRI), and digital breast tomosynthesis (DBT)

Many multiple randomized trials have come to the consensus that routine screening mammography should be offered to women ages 50 to 69 rather than that for women of the age group 40 to 49 or women over 70 years of age. Genetic mutations have been discovered, and an increase in the risk of breast cancer and the development of breast cancer risk prediction models have stimulated rigorous efforts to develop screening methods for risk stratification. For high-risk women, in addition to mammography, ultrasonography & breast magnetic resonance imaging (MRI) have been studied as screening methods. The discussion will include patient risk stratification and management options for women with a genetic predisposition to breast cancer. Surveillance in women with a personal history of breast cancer is discussed in detail separately.

Anatomy and Physiology

The mature adult breast comprises skin, subcutaneous tissue, epithelial, and stromal components. The epithelial component is comprised of branching ducts that connect the structural and functional units of breasts, known as lobules to the nipple. The stromal component comprises the majority of the breast volume in a non-lactating breast and is composed of fibrous and adipose tissue. The breast tissue extends from the 2nd and 6th ribs vertically and sternal edge to midaxillary line horizontally. A part of breast tissue projects into the axilla and is known as the axillary tail of Spence. The skin of the breast is thin and contains sebaceous glands, exocrine sweat glands, and hair follicles. The nipple is devoid of hair follicles and contains abundant sensory nerve endings and sebaceous and apocrine glands. The areola, which measures about 16 to 60 mm, is nearly circular and has higher pigmentation. There are elevations near the periphery of the areola, which form due to the opening of ducts of Montgomery glands, which are large sebaceous glands and are known as Morgagni tubercles. The Montgomery glands represent a stage between sweat and mammary glands. The breast is covered with the superficial pectoral fascia, which continues with the superficial abdominal fascia of Camper. The breast is covered from the underside with deep pectoral fascia, which covers the muscles pectoralis major and serratus anterior. The two fascial layers covering the breast tissue are connected by fibrous bands known as Cooper suspensory ligaments that provide natural support to the breasts. The majority of total breast blood supply comes from internal mammary vessels. Sensory innervations are mainly from anterolateral and anteromedial branches of thoracic intercostal nerves T3 to T5. It is also supplied by lower fibers from supraclavicular nerves of the cervical plexus.

Indications

In 2015, the American Cancer Society (ACS) recommended that

- Women with an average risk should undergo regular screening mammography starting at age 45 (strong recommendation).
- Women who are between 45 to 54 years should undergo screening annually, and women 55 years and older can undergo biennial or annual screening.

- It recommends that women aged 40 to 44 are to be given a choice to start annual mammography.
- Routine screening strategies are not strongly advised for women in age groups of 40 to 49 or those above the age of 70. However, in collaboration with mammography, breast MRI has been studied as an important screening method for high-risk females and those with dense breasts. Women are advised to continue screening mammography who have until ten years of life expectancy and good health in general.

The United States Preventive Services Task Force (USPSTF)

It recommends biennial mammography in women of age group 50 to 74. For the age group 40 to 49, group screening can be considered after discussing and evaluating the risks and benefits of this test with their physician.

WHO

It advises biennial mammography screening for women aged 50 to 69 years in well-resourced settings.

American College of Obstetricians and Gynecologists

It recommends twice-annual screening mammography after 55 years of age, which prevents harm as long as the patient is informed.

The USPSTF and ACS differ markedly in terms of recommendations for clinical breast examinations (CBE). ACS does not recommend them, while the USPSTF recommends a clinical breast examination with mammography in women with an average risk of developing breast cancer.

The panel of the National Comprehensive Cancer Network (NCCN) recommends women with average risk in the age group of 25 to 39 years to have a clinical assessment, risk reduction counseling & clinical breast examination every 1 to 3 years. They should also be recommended to inform about any changes in their breast to their health care provider immediately.

Contraindications

Certain precautions are to be taken for breast screening considering the age of a woman. New guidelines by the American College of Physicians suggest that it is cautioned that beginning at the age of 40, average-risk women with no symptoms should discuss with their physician regarding benefits, personal preferences, and potential harms of breast cancer screening with mammography before the age of 50.

Clinical breast examinations screening is not recommended no matter what age for average-risk women. The screening for those aged 75 years or older or with a life expectancy of 10 years or less should stop.

Equipment

Mammography is a low-dose x-ray modality for detailed imaging of the breast. It is the best population-based method for screening. It can demonstrate micro-calcifications less than 100 micrometers, which makes it capable of detecting lesions before they become palpable. Mammography can be done in two forms, screening and diagnostic. Those with a family or personal history of breast cancer require additional views in diagnostic/screening mammography.

Breast imaging reporting and data systems are used to guide the breast cancer diagnostic rule. It involves levels of categorization to interpret breast lesions in a standardized format among radiologists. However, the majority of screening mammograms show the absence of evidence of cancer on subsequent testing, 1% to 2% show abnormality requiring biopsy. The majority (80%) of these are benign lesions.

BI-RADS scoring:

- 0—Need more information. Another mammogram may be needed.
- 1—No abnormality. Continue routine screening.
- 2—Benign breast conditions, such as cysts. Continue with routine screening.
- 3—Something which is probably not cancer is detected. A repeat mammogram within the next six months.
- 4—Suspicious of cancer. May need a biopsy.
- 5—Highly suggestive of cancer. It will need a biopsy.

Digital mammography can be applied better to diagnose breast cancer in dense breasts. Tomosynthesis or 3D mammography may also be used, which improves the ability to find minutely sized cancers and decrease the probability of false positives.

Magnetic resonance imaging (MRI) cost is higher than for mammography worldwide. Thermography use is based on the fact of elevated breast skin temperatures overlying breast cancers.

Ultrasound is usually used to know more about the positive clinical examination or screening mammography on diagnostic fronts. It has limited use as a screening device

due to various factors, including the inability to find micro-calcification and poor specificity.

Screening MRI is considered less specific, but more sensitive than mammography in high-risk women for detection of invasive cancers.

Annual mammography and MRI, and at times at 6 months duration, is needed for women with *BRCA* gene mutations, strong family history of breast cancer, and prior chest radiation therapy.

Personnel

As a patient can herself find breast cancer at times, she should not only be informed and made aware of the breast self-awareness but also instructed to notify the health care provider if and when any change in the breast occurs. The health care providers should be affluent with screening and counseling asymptomatic patients with a family history of *BRCA* cancers. Genetic counselors and the team should be doing assessments to provide genetic testing after informed consent.

Preparation

Patients' history – personal as well as family is important to be assessed periodically by the health care providers. This should include risk factors, prior biopsies, and their results, radiation exposure, as well as a family history of breast cancer. The identification of women who will benefit from genetic counseling is essential. The Gail model is used to assess and stratify high-risk women.

Breast self-awareness is promoted according to new studies. Breast self-awareness is guided by the appearance and feel of the woman's breasts and the ability to notice any change in the breasts and report to the primary health care provider; however, in breast self-examination a regular and systematic way to examine breasts as in self-examination.

Technique

Imaging techniques for breast cancer screening are best and well accepted from a sensitivity and specificity point of view, keeping into consideration the complications and harms to the screening population. Others are breast self-examination and clinical breast examination. Amongst the imaging techniques, mammography is best accepted. Other commonly used ones are ultrasonography and MRI.

Screening methods like mammography are most effective when targeted screening strategies are used, keeping age into considerations and other criteria like hormonal exposure, family history, and risk factors like radiation, obesity, and genetics.

Magnetic resonance imaging (MRI) is done by injection of intravenous contrast material, which increases the ability to delineate the normal breast from abnormal lesions.

Complications

The mammography screening method is not accurate. Data suggests that it can be less sensitive in detecting cancer in mammographically dense breast tissue. Mammography may lead to false-negative results leading to missing cancer when it is present.

Additional treatment is associated with screening, which may not be effective and needed. Those who are screened are more likely to have surgical and radiation therapy.

And the treatment may harm economically, psychologically, physically, or productively.

There has been uncertainty in estimating expectancy of life along with decreased quality-adjusted life expectancy due to overdiagnosis.

Depending on the age of initiation, frequency, and cessation of screening, the overall lifetime radiation exposure increases as women have exposure of about 3.7 mGy per digital mammography. They are hence increasing radiation-induced breast cancer risk of 125 cases per 100,000 women in those aged 40 to 74 years. And thus, an increased number of deaths due to breast cancer screen.

Ultrasonography is generally considered to be a highly operator-dependent modality and supplemental screening test that requires a skilled practitioner, high-quality examination, and state-of-the-art equipment. Given the results of these studies, a prospective, multicenter study is warranted to examine the role of this modality of imaging in breast cancer screening.

Clinical Significance

Age should not be the only deciding factor to discontinue or continue breast cancer screening. Combinations and a balanced overview of all risk factors and density of breasts should be considered while planning for breast screening age-wise. The sensitivity and specificity of mammography become higher as age advances in comparison to young aged women.

A dense breast has a high probability of developing breast cancer. While mammography decreases the sensitivity of detecting breast cancer in women with dense breasts, other screening strategies like MRI and ultrasonography may be employed.

It has been observed that women have fast-growing breast cancers, and mammography cannot be of much help here from a screening perspective. It is advisable to discuss breast cancer screening with all women from age 40, and proper documentation should be done. According to the new guidelines, age alone should not be the guiding factor to stop screening. Women having an average risk of breast cancer should continue breast screening mammography until at least 75 years of age. General health and life expectancy should be considered.

Early age of initiation and use of MRI and/or ultrasound, may be considered for women with the first-degree relative with breast cancer. A combination of annual breast MRI plus mammography for breast cancer is recommended in women who are BRCA mutation carriers.

Enhancing Healthcare Team Outcomes

The screening of breast cancer is a challenging and complex arena of clinical care as well as preventive health care. The domain of primary health care is not only for appropriate screening and apt history, but also abilities to know and find the inherent risk factors which may cause an imbalance in the benefit obtained from screening. Keeping the age and density of breasts into consideration, proper counseling for genetic and familially predisposed patients, a shared opinion approach has to be sought.

From the diagnostic fronts, the knowledge, skills, and abilities of radiologists, as well as technicians and nursing staff, are recommended to support and obtain required details to add to the process of screening, decreasing the probabilities of false positives as well as false negatives.

The coordinated and cooperative approach of the interprofessional team will increase the probability of diagnosis by the screening methods and enrich the health care support to the patients.

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Breast Cancer Screening Guidelines for Women

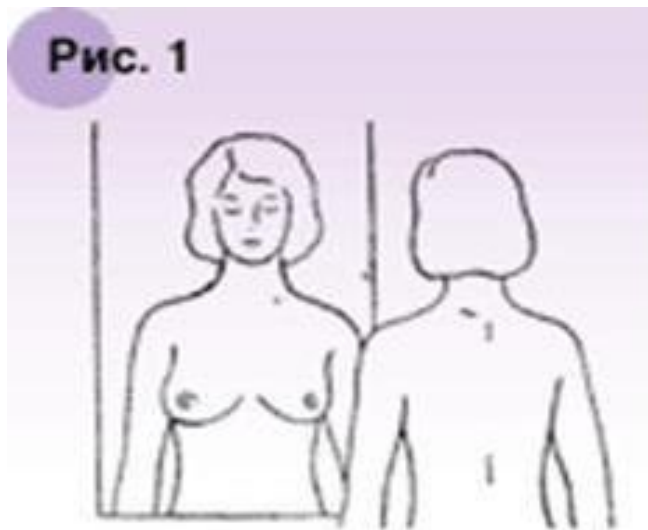
	U.S. Preventive Services Task Force ^{1,2}	American Cancer Society ³	American College of Obstetricians and Gynecologists ^{4,5,6}	International Agency for Research on Cancer ⁷	American College of Radiology ^{8,9}	American College of Physicians ¹⁰	American Academy of Family Physicians ¹¹
Women aged 40 to 49 years with average risk	The decision to start screening with mammography in women prior to age 50 years should be an individual one. Women who place a higher value on the potential benefit than the potential harms may choose to begin screening once every two years between the ages of 40 and 49 years.	Women aged 40 to 44 years should have the choice to start breast cancer screening once a year with mammography if they wish to do so. The risks of screening as well as the potential benefits should be considered. Women aged 45 to 49 years should be screened with mammography annually.	After counseling and if an individual desires screening, mammography may be offered once a year or once every two years and clinical breast exams may be offered once a year. Decisions between screening with mammography once a year or once every two years should be made through shared decision-making after appropriate counseling.	There is limited evidence that screening with mammography reduces breast cancer mortality in women 40-49 years of age.	Screening with mammography is recommended once a year.	Clinicians should discuss whether to screen for breast cancer with mammography before age 50 years. Discussion should include the potential benefits and harms and a woman's preferences. The potential harms outweigh the benefits in most women aged 40 to 49 years.	The decision to start screening with mammography should be an individual one. Women who place a higher value on the potential benefit than the potential harms may choose to begin screening.
Women aged 50 to 74 years with average risk	Screening with mammography once every two years is recommended. The evidence is insufficient to assess the additional benefits and harms of clinical breast examination.	Women aged 50 to 54 years should be screened with mammography annually. For women aged 55 years and older, screening with mammography is recommended once every two years or once a year. Women aged 55 years and older should transition to biennial screening or have the opportunity to continue screening annually. Among average risk women, clinical breast examination to screen for breast cancer is not recommended.	Screening with mammography is recommended once a year or once every two years. Decisions between screening with mammography once a year or once every two years should be made through shared decision-making after appropriate counseling. Clinical breast exams may be offered annually. Clinical breast exams should be offered in the context of a shared, informed decision-making approach that recognizes the uncertainty of additional benefits and harms of clinical breast examination beyond screening mammography.	There is sufficient evidence that screening with mammography reduces breast-cancer mortality to an extent that its benefits substantially outweigh the risk of radiation-induced cancer from mammography. There is inadequate evidence that clinical breast examination reduces breast cancer mortality. There is sufficient evidence that clinical breast examination shifts the stage distribution of tumors detected toward a lower stage.	Screening with mammography is recommended once a year.	Clinicians should offer screening with mammography once every two years. In average-risk women of all ages, clinicians should not use clinical breast examination to screen for breast cancer.	Screening with mammography is recommended once every two years. Current evidence is insufficient to assess the benefits and harms of clinical breast exams.

Algorithm of examination of mammary glands

Stage 1:

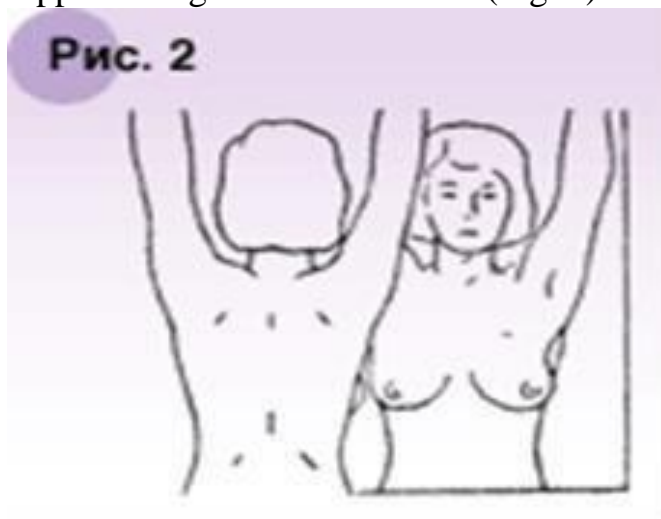
The patient stands with her hands freely lowered. Carefully examine each gland. Check whether there are any changes in the size, shape, contours of the breast (one gland may be slightly larger, this is normal). Pay attention to the symmetry of both glands, whether the glands are located at the same level, whether they move evenly when raising and placing the hands behind the head, leaning, turning to the right and left. Is there no fixation or displacement of one of the glands to the side?

A woman should do the same self-examination every month, looking in the mirror (Fig. 1).



Stage 2:

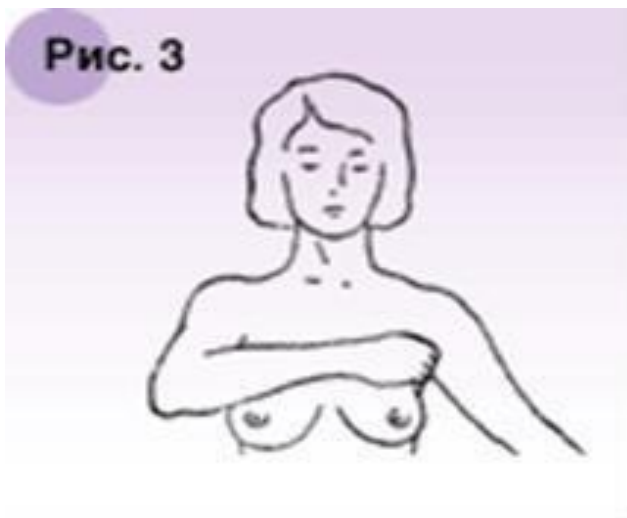
The patient raises her hands up - again examine the mammary glands in turn, paying attention to their displacement up, to the sides or down; change in shape with the formation of an increase, depression, retraction of the skin or nipple; the appearance of liquid drops from the nipple during these movements (Fig. 2)



Stage 3:

In the "standing" position - the so-called superficial palpation is performed, when the pads of the fingers do not penetrate into the thickness of the gland, which makes it possible to detect small formations located directly under the skin. Then a deep palpation is performed, when the pads of the fingers successively reach the ribs. Palpation should be carried out from the collarbone to the lower edge of the ribs and from the sternum to the axillary line, including the axillary region, where it is possible to detect enlarged lymph nodes (Fig. 3)

Methodical recommendations of a practical lesson, EPP "Medicine", 5th year, Faculty international. Elective discipline "Simulation training in obstetrics and gynecology".



Stage 4:

Carrying out "circular" palpation of the mammary glands in the standing position of the patient. It is recommended to start palpation from the outer upper square, then - with circular movements clockwise.

Stage 5:

Palpate the mammary glands in the "lying on your back" position.

This is the most important part of the inspection, because this is the only way to properly examine all tissues. At the same time, note which mammary glands can be felt under the fingers.

Palpation is carried out lying on a relatively hard, flat surface; you can put a roller or a hard pillow under the examined gland, stretch your hand along the body or put it behind your head. (Fig. 4)



Two methods of palpation are offered:

1. The method of squares, when the entire surface of the front chest wall from the collarbone to the costal edge and the mammary gland is conditionally divided into small squares. The examination is carried out sequentially in each square from top to bottom, as if by stairs. (Fig. 5)



2. The spiral method, when the examination of the mammary gland is carried out in a spiral in the form of concentric circles, starting from the armpit to the nipple. The pads of the fingers make circular movements, moving in the direction of the nipple. (Fig. 6)



Palpate the inguinal lymph nodes

Stage 6: Examination of the nipple

When examining the nipples, it is necessary to determine whether there are no changes in their shape and color, whether they are retracted. Are there wetting, sores or cracks. It is necessary to feel the nipple and the inframammary area. This zone in women is quite sensitive and in some it is accompanied by erotic or unpleasant sensations.

In conclusion, you need to carefully take the nipple with your thumb and forefinger and press on it, while noting the nature of the secretions from it or their absence. (Fig. 7)



Teach a woman to perform a monthly breast self-examination:

Out of 10 changes detected in the mammary gland - 9 are detected by women themselves, since no one knows the state of their mammary glands better than them.

Most of the changes detected in the mammary gland are benign.

It is better to carry out the examination on the same day of the menstrual cycle, because changes in the size and structure of the breast occur during the month.

The best time is one week after the start of menstruation, when the mammary gland is in a relaxed state, and at the onset of menopause - on the same day of each calendar month.

4. Summing up:

On-going control: oral survey, testing, assessment of performance of practical skills, solution of situational clinical tasks, assessment of activity in class, etc.

The structure of the current assessment in the practical session:

1. Evaluation of theoretical knowledge on the subject of the lesson:

- methods: survey, solving a situational clinical problem;
- maximum score – 5, minimum score – 3, unsatisfactory score – 2.

2. Evaluation of practical skills and manipulations on the subject of the lesson:

- methods: assessment of correct performance of practical skills;
- maximum score – 5, minimum score – 3, unsatisfactory score – 2.

3. Evaluation of work with the patient on the subject of the lesson:

- methods: assessment of: a) communication skills of communicating with the patient, b) the correctness of prescribing and evaluating laboratory and instrumental studies, c) compliance with the differential diagnosis algorithm, d) substantiation of the clinical diagnosis, e) drawing up a treatment plan;
- maximum score – 5, minimum score – 3, unsatisfactory score – 2.

Criteria for current assessment on the practical lesson:

«5»	The student is fluent in the material, takes an active part in the discussion and solution of situational clinical problems, confidently demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies, expresses his opinion on the topic, demonstrates clinical thinking.
«4»	The student is well versed in the material, participates in the discussion and solution of situational clinical problems, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with some errors, expresses his opinion on the topic, demonstrates clinical thinking.
«3»	The student isn't well versed in material, insecurely participates in the discussion and solution of a situational clinical problem, demonstrates practical skills during the examination of a pregnant and interpretation of clinical, laboratory and instrumental studies with significant errors.
«2»	The student isn't versed in material at all, does not participate in the discussion and solution of the situational clinical problem, does not demonstrate practical skills during the examination of a pregnant and the interpretation of clinical, laboratory and instrumental studies.

The student is admitted to the credit if he fulfills the requirements of the educational program and if he received at least 3.00 points for the current educational activity.

Test

At the end of the study of the discipline, the assessment is carried out. Only those students who have no academic debt and have an average score for the current educational activity of at least 3.00 are admitted to the final certification. If the discipline ends with a credit, only the average score of the current performance is calculated, that is, the arithmetic average of all received grades on a traditional scale, rounded to two decimal places, which is converted according to the 200- point system. At the same time, the average current score is recorded in the corresponding documentation, which is converted on a 200-point scale and a grade is assigned on a 2-point scale ("passed" or "not passed"):

- the grade "passed" is awarded to a student who has completed the curriculum of the discipline and has no academic debt; the level of competence is high (creative);
- the grade "failed" is assigned to a student who has not completed the curriculum of the discipline, has academic debt (average grade below 3.0 and/or missed classes); the level of competence is low (receptive-productive).

RECOMMENDED LITERATURE

Basic:

1. Zaporozhan V.M., Mishchenko V.P. Obstetrics and gynaecology in 2 Books : Book 1 : Obstetrics, 2007. – 373 pp.
2. Williams Manual of Obstetrics (24th Ed) F. G. Cunningham, K. J. Leveno, S. L. Bloom, C. Y. Spong, J. S. Dashe, B. L. Hoffman, B. M. Casey, J. S. Sheffield, McGraw-Hill Education/Medical. – 2014. – 1377 pp.
3. Textbook of Gynecology (6th Ed) Dutta DC., Hiralal Konar (Ed.). – JAYPEE BROTHERS MEDICAL PUBLISHERS (P) LTD, 2013. – 702 pp.
4. DC Duttas Textbook of Obstetrics including Perinatology and Contraception (8th Ed.) Dutta DC., Hiralal Konar (Ed.). – JAYPEE BROTHERS MEDICAL PUBLISHERS (P) LTD, 2015. – 782 pp.
5. Llewellyn-Jones Fundamentals of Obstetrics and Gynaecology (10th Ed). Jeremy Oats, Suzanne Abraham. Elsevier. 2016. – 384 pp.
6. The FIGO Textbook of Pregnancy Hypertension. An evidence-based guide to monitoring, prevention and management. L. A. Magee, P. Dadelszen, W. Stones, M. Mathai (Eds), The Global Library of Women's Medicine. – 2016. – 456pp.
7. Mayo Clinic Guide to a Healthy Pregnancy. Roger W. Harms (Ed). Rosetta books, 2011. – 612 pp.
8. Best practice in labor and delivery / edited by Richard Warren, S. Arullkumaran. Cambridge University Press. – 2009. – 362 pp.
9. Basic Science in Obstetrics and Gynaecology / edited by Philip Bennet, Catherine Williamson. 4th Edition. 2010, Churchill Livingstone Elsevier. – 386 pp.

Additional:

1. Maternal-Fetal Medicine. Creasy R.K., Resnik R – 2009. – 1296 pp.
2. Gibbs R. S., Karlan B. Y., Haney A. F., Nygaard I. E. Danforth's Obstetrics and Gynecology (10th Ed).- Lippincott Williams & Wilkins. – 2008. – 2225 pp.
3. CTG Made Easy / edited by Susan Gauge, Christine Henderson. 3rd Edition, 2009.- Elsevier Churchill Livingstone. – 280 pp.
4. Obstetrics: Normal and Problem Pregnancies, 7th Edition S. Gabbe, J. R. Niebyl, J. L. Simpson, M. B. Landon, H. L. Galan, E. R. M. Jauniaux, D. A. Driscoll, V. Berghella and W. A. Grobman, Elsevier. – 2017. – 1320 pp.
5. Obstetrics by Ten Teachers (20th ed) Louise C. Kenny, Jenny E. Myers. – CRC Press. – 2017. – 342 pp.
6. Current Progress in Obstetrics and Gynaecology. Vol 4. Eds. J. Studd, Seang Lin Tan, F. Chervenak. – 2017. – 419 pp.
7. Recent Advances in Obstetrics and Gynaecology. Vol 26. W. Ledger, J. Clark. – JP Medical. – 2015.– 230 pp.
8. Proactive Support of Labor. Reuwer P., Bruinse H., Franx A. – 2015. – 216 pp.

INTERNET SOURCES:

Methodical recommendations of a practical lesson, EPP "Medicine", 5th year, Faculty international. Elective discipline " Simulation training in obstetrics and gynecology".

1. <https://www.cochrane.org/>
2. <https://www.ebcog.org/>
3. <https://www.acog.org/>
4. <https://www.uptodate.com>
5. <https://online.lexi.com/>
6. <https://www.ncbi.nlm.nih.gov/>
7. <https://pubmed.ncbi.nlm.nih.gov/>
8. <https://www.thelancet.com/>
9. <https://www.rcog.org.uk/>
10. <https://www.npwh.org/>