2017

Program for Prevention and Control of Breast Cancer

Reference Manual

Clinical Breast Exam

INEN
INSTITUTO NACIONAL DE ENFERMEDADES NEOPLASICAS
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UNIT 1: Basis of Breast Cancer

Key messages:

- Breast cancer is the most common cancer among women worldwide.
- Early detection has reduced mortality rates of breast cancer in the world.
- Breast cancer rates are increasing in Preu.
- Mortality can be reduced by detecting and treating cancer in early stages.
- Screening is fundamental because most women with early strage breast cancer do not present symptoms.

Introduction

The incidence of breast cancer is constantly increasing in low- and middle-income countries as the life expectancy of women increases and lifestyles change and increase risk factors for breast cancer. As with other illnesses, the burden falls heavier on the poor, the outcast, and rural women due to unequal access to detection and treatment. The importance of early detection and treatment for breast cancer is well known, the cost and success of the treatment are directly related to the stage of the cancer when diagnosed.

Overall perspective of the breast cancer problem

According to the International Agency for Research on Cancer (IARC), breast cancer is the most frequent cancer among women with approximately 2,088,849 new cases diagnosed in 2018. It is the most common cancer in developed and semi developed countries and it ist the second most common type of cancer in general (after lung cancer) being responsible for 11.6% of cancer incidence. The incidence of breast cancer varies in different regions in the world with 27.9 for each 100.000 women in Central Africa, 38.3 in the Central America region and 74.4 in Europe.

Breast cancer is also the leading cause of death by cancer in women in developed countries (178,554 deaths, 6,4% of the total) and the less developed regions (see chart 1), where it is estimated that 205,691 deaths is higher than the number estimated for deaths caused by lung cancer (134,516 deaths).

Chart 1

Cáncer de mama

Incidencia y Mortalidad estimadas a nivel Mundial 2012

Número estimado (miles)	**Casos**	**Muertes**
Mundial	1671	522
Desarrollados	794	198
Vías de desarrollo	883	324
WHO Región Africa (AFRO)	100	40
WHO Región Américas (PAHO)	408	92
WHO Región Este del Mediterraneo (EMRO)	99	42
WHO Región Europa (EURO)	500	143
WHO Región Sud-Este Asiático (SEARO)	240	110
WHO Región Pacífico Occidental (WPRO)	330	86
Miembros IARC (24 países)	940	257
Estados Unidos de América	233	44
China	187	48
India	145	70
Unión Europea (EU-28)	367	91

Source: IARC (translated by Dr. Javier Manrique)

Breast Cancer		
Incidence and Mortality estimated at a global level 2018		
Estimated number (thousands)	Cases	Deaths
World	2088849	626679
Developed	912	205
Development path (2012)	883	324
WHO African Region	124	55
WHO American Region (PAHO)	462	99
WHO Mediterranean East Region	100	48
WHO European Region	562	150
WHO South East Aisan Region	270	129
WHO Western Pacific Region	548	86
IARC Members (24 countries) (2012)	940	257
United States of America	234	41
China	367	69
India	162	87
European Union (2012)	367	91

Although historically speaking, breast cancer incidence has been higher in countries with high income, in recent years there has been a rapid increase in the incidence in the development world. This may be due to changes in the exposure of these populations to risk factors. Women are living to older ages, lifestyles are changing with

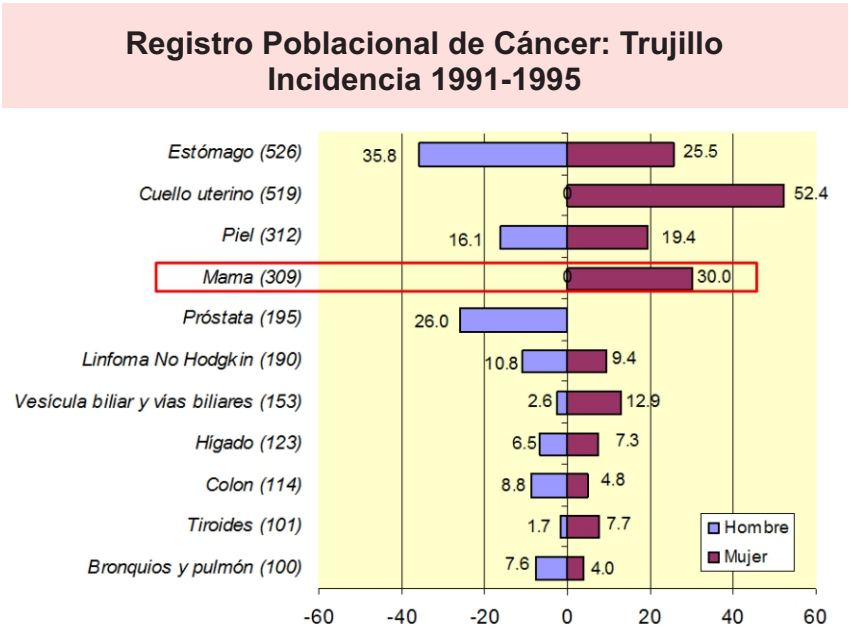
urbanization which includes less physical activity and a higher consumption of calories and diets that are rich in fat, and there are changes in reproductive behaviors sucha as having fewer children and them later in life and a reduction in breastfeeding practice.

It is expected that societies in modernization processes experience higher rates of cancer and other chronic illnesses as they pass the epidemiological transition. While early detection is critical to assure positive results, women in developing countries, especially the poorest, tend to present a more advanced illness. Between 1985 and 1997, 42% and 33% of breast cancer cases in Lima, Peru, were presented in stages II y III. Its presentation at an advanced stage is an obstacle to improve the results of breast cancer; however early detection, which reduces fatalities caused by this cancer in the developed world, has not been widely implemented in many countries with historically low risk profiles.

Breast cancer in Peru

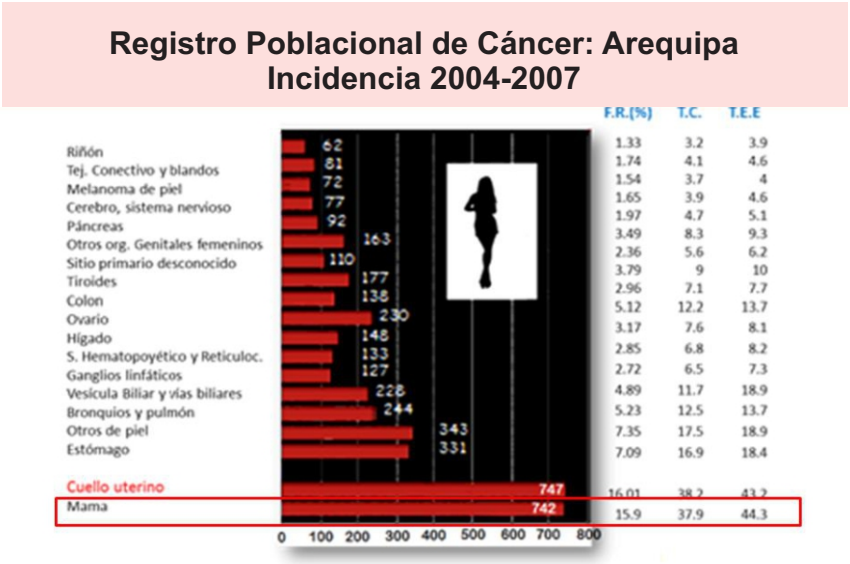
According to Globocan 2012, the International Agency for Research on Cancer (IARC) database, Peru had approximately 3,972 new cases of breast cancer and 1,208 deaths in 2012, being the third cause of death by cancer in Peru together with lung cancer and after cervical and stomach cancer, with a standard annual incidence rate by age of 28/100,000 women. However, these rates are increasing in the same manner as other parts of the world in development. Images 1, 2 and 3 show an increase in breast cancer incidence rates according to the cancer registry in Trujillo (1991 and 1995), Arequipa (2004 and 2007) and Lima Metropolitan (2010 and 2012).

Image 1: Incidence rates (for every 100,000 women) for Breast Cancer, Registries for Cancer in Trujillo



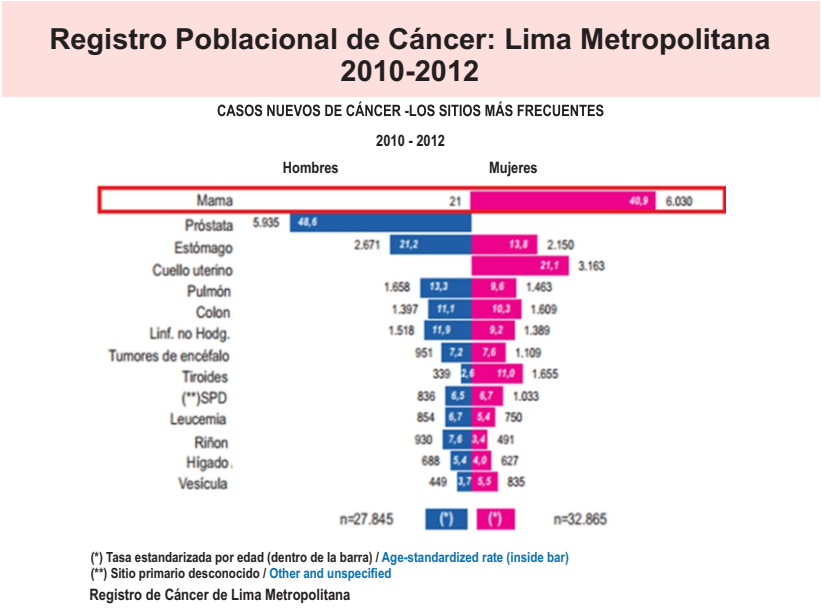
Registry of Cancer Population: Trujillo Incidence 1991 – 1995
Stomach (526)
Cervical (519)
Skin (312)
Breast (309)
Prostate (195)
Non Hodgkin Lymphoma (190)
Gall bladder and biliary tract (153)
Liver (123)
Colon (114)
Thyroides (101)
Bronchi and lung (100)

Image 2: Incidence rates (for every 100,000 women) for Breast Cancer, Registry for Cancer in Arequipa



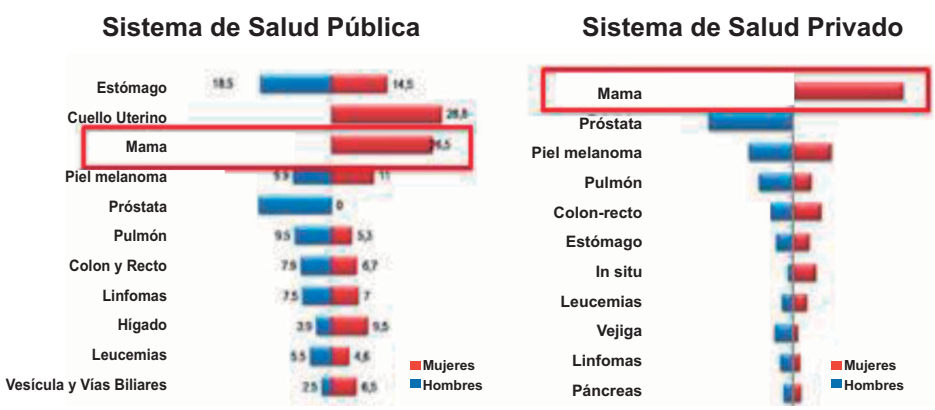
Registry of Cancer Population:Arequipa Incidence 2004 – 2007
Kidney
Connective and soft tissue
Skin metanoma
Brain, nervous system
Other female genital organs
Unknown primary site
Thyroides
Colon
Ovary
Liver
Hematopoietic system
Lymph nodes
Gall bladder and biliary tract
Ronchi and lung
Others of skin
Stomach
Cervical Breast

Image 3: Incidence rates (for every 100,000 women) for Breast Cancer, Registry for Cancer in Lima Metropolitan



Registry of Cancer Population: Metropolitan Lima 2010-2012 NEW CANCER CASES – MOST FREQUENT SITES
Breast
Prostate
Stomach
Cervical
Lung
Colon
Non Hodgkin Lymphoma
Brain tumors
Thyroides
SPD
Leukemia
Kidney
Liver
Gall bladder

Image 3: Incidence rates (for every 100,000 women) for Breast Cancer, Registry for Cancer in Lima Metropolitan



Disparities in Cancer Incidence in Peru	
Public Health System	Private Health System
Stomach	Breast
Cervical	Prostate
Breast	Non melanoma skin
Non melanoma skin	Lung
Prostate	Colon and Rectum
Lung	Stomach
Colon and Rectum	On site
Lymphoma	Leukemia
Liver	Bladder
Leukemia	Lymphoma
Gall bladder and biliary tract	Pancreas

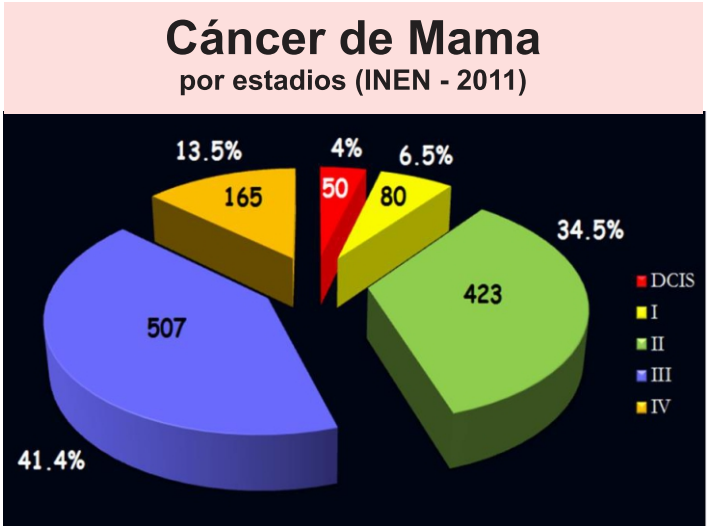
In Peru, as in other part of the world, breast cancer constitutes a public health problem; the application of preventive measures, early diagnosis and treatment is important to decrease the mortality caused by this illness.

The forecast and treatment options depend mainly on the stage of the illness and the type of breast cancer. Mortality can be reduced by detecting and treating cancer at early stages.

Stage 0 is considered to be a non-invasive or on site cancer. In this stage, breast cancer is smaller than 2.0 cm and it does not include lymph nodes, it is considered to be “localized”. In stage II, the tumor is larger than 2.0 cm and includes lymph nodes. Stage III breast cancer is more advanced but it is still confined to the breast and regional nodes.

When breast cancer includes lymph nodes, it is considered to be “regional”. Stage IV of breast cancer has had metastasis to other parts of the body outside of the breast for example in the lungs, liver or lymph nodes outside of the axilla. When breast cancer makes metastasis, it is considered as “distant”. Breast cancer in stage III or IV is considered an advanced cancer.

In Peru (data INEN-2011), the majority of breast cancer cases were diagnosed in advanced stages as seen in Image 5; 54.9% of cancer cases were diagnosed in advanced stages (41.4% in stage III and 13.5% in stage IV), 34.5% in stage II, el 6.5% in stage I and only 4% as On Site Ductal Carcinoma. (Department of Epidemiology and Cancer Statistics, Peru).



Source: Department of Epidemiology and Cancer Statistics, Peru

The stage of breast cancer when diagnosed has a lot to do with survival. Data from the United States show the survival per stage. When breast cancer is detected and localized, survival to 5 years is 99%. When it is regional, survival reduces to 84%.When cancer is distant, survival to 5 years is 23%. The distribution and survival per breast cancer stage is described in the following chart:

Table 2: Distribution of Stage and Survival to 5 years in the USA, Stage at Diagnosis 2001-2007

Stage at Diagnosis	Stage distribution (%)	Survival to 5 years (%)
Localized (confined at a primary site)	60	99
Regional (includes lymph nodes)	33	84
Distant (cancer in metastasis)	5	23
Unknown without a stage	2	52

Source: SEER, National Cancer Institute in USA

When comparing mortality statistics en USA and Peru, we see that although the breast cancer incidence is lower in Peru, the proportion of mortality is higher. Most of cancer cases in Peru are detected in an advanced stage. The proportion of mortality in USA is 18.86% while the mortality in Peru is 30.41% according to the following table:

Table 3: Incidence, Mortality, and Proportion of Mortality by Breast cancer in USA and Peru.

	Incidence	Mortality	Proportion of mortality
USA	232,714	43,909	18.86%
Peru	3,972	1,208	30.41%

Source: Globocan 2012

Importance of Screening

It is important to understand that most women with early breast cancer do not present symptoms and therefore, the screening done by health professionals is crucial in the early detection of breast cancer. Regular exams, especially the clinical breast exam, are fundamental to detecting cancer in its first phases or stages. This exam must be done through a complete study, starting from the medical history, timeline of symptoms if there are any and overall, the evaluation of the breasts.

UNIT 2: Program for prevention and control of breast cancer in Peru

Key messages:

- It is important to increase access to local screecing facilities
- The national plan has breast cancer as a priority
- The new attention model may reduce the mortality rate of breast cancer

History of the National Program for Prevention of Cancer

The National Institute for Neoplastic Diseases is an Implementing Public Body with the mission of protecting, promoting, preventing and guaranteeing the comprehensive assistance of oncological patients, with a priority set to people of low economic resources, as well as controlling the techniques and administration of national health services of neoplastic diseases and carrying out research and educational activities.

In 2002, the National Institute for Neoplastic Diseases decided to create the Direction for Cancer Control in order to improve the organization of services, optimize the use of resources and improve the access of rural and marginal urban population to specialized attention; its function is oriented to the deconcentration and decentralization of oncological assistance in Peru, making services accessible to the population and reducing the demand burden at INEN, which has extended waiting periods for outbound patients, admission, surgical interventions and procedures.

The oncological service network is organized in oncological units for the screening and initial treatment in the majority of health centers in Lima and the creation of macro regional offices for specialized treatment located in the cities of Trujillo and Arequipa.

In 2010, and with the help of the Ministry of Economy and Finances, the Implementing Public Body of the National Institute of Neoplastic Diseases prepared a Strategic Budget Program for the Prevention and Control of Cancer which focuses mainly on the promotion of health, primary and secondary prevention of the five most frequent malignancies in our country in which Breast Cancer occupies the first place; this was started in ten regions of the country and the rest of the country by the following year. The National Plan for Control of Cancer: “Esperanza Plan” was created in 2012; it was created on the base of the Strategic Budget Plan and provides free assistance to the unprotected Peruvian population through the Integrated Health System and FISSAL in the Promotion of Health, Primary and Secondary Prevention as well as Diagnosis, Treatment, Rehabilitation and Symptom Palliative Treatment of the most frequent cancers.

National Plan for Prevention and Control of Cancer

When establishing a national plan for prevention and control of cancer there have been certain technical standards developed to guide all related activities. The Oncological Technical Standard for Prevention, Detection and Early Diagnosis of Breast Cancer at a National Level, 2008, descibes the justification and objectives for the national plan:

“During the last years, there has been important progress made in the treatment of breast cancer; however, the prevalence of cases in advanced stages is predominant, prevention and early detection are still weak.

Therefore, it is feasible for Peru to have a decrease of at least 30% of mortality in this cancer in the following ten years if we consider the database. There 5 types of cancer as a priority as part of the National Plan for Prevention and Control of Cancer and Ministerial Resolution No 030-2007-Ministry of Health. Breast cancer is one of them. Activities for prevention and control of breast cancer have a budget according to the 2011 Assignation to the Health Sector (Budget for Results).

Description of the Oncological Technical Standard for Prevention, Detection and Early Diagnosis of Breast Cancer at a National Level. The Oncological Technical Standard for Prevention, Detection and Early Diagnosis of Breast Cancer at a National Level, 2008, also details a program for detection and early diagnosis that responds to reality and current challenges related to breast cancer in Peru:

“According to the Registry of Cancer in Lima Metropolitan 2004-05, breast cancer is the first place in incidence and mortality (women). There are not any accurate numbers at a national level but, based on the Registry of Cancer in Arequipa 2007, it is the first place and based on the Registry of Trujillo 1997, breast cancer is immediately after cervical cancer. In addition, the National Institute of Neoplastic Diseases represents a hospital registry and states that the most common malignant cancer in women is cervical cancer followed by breast cancer.

We must focus our effort in the population with a higher risk in order to have an efficient management of our resources in the prevention of breast cancer and have enough coverage, this is a factor of great impact in the final objective which is to decrease mortality caused by this type of cancer.

The aim is to have guidelines to standardize the assistance of patients provided by health staff considering the current legal framework (General Health Law) in the country which revalues the users of health services and considers them as a centerpiece for health rendering. On the other hand, the Ministry of Health is gradually developing modernization processes that look to have a better efficiency in assistance at a health center, this allows the achievement of better results in the prevention and control on Non Communicable Disease.”

Organization of services for prevention and detection of breast cancer

Oncological Technical Standards for Prevention, Detection and Early Diagnosis for Breast Cancer at a National Level, 2008, early diagnosis programs for cancer are organized in three levels: primary prevention (reduction of risk sources), secondary prevention (early detection) and tertiary prevention (treatment). Primary prevention has the objective of reducing sources of risk. Secondary prevention is early detection, the clinical illness of breast cancer. Finally, tertiary prevention is early and suitable treatment of cancer. Within this module, primary attention has a role in each level being the base of secondary prevention and a powerful tool for a program of prevention and control.

Programs of early diagnosis of cancer

Many cases of cancer can be avoided with the level of development of science and knowledge there currently is.

The access to information, suitable use of resources and well directed programs may reduce mortality, increase the cases diagnosed at early stages, guarantee suitable treatment and finally, increase the life period.

Primary Prevention:

A Technical Standard (2008) is defined in public health terms as ethiological prevention, in other words, behaviors that lead to the reduction of incidence in cancer cases with the purpose of reducing morbidity and mortality.

Primary prevention in breast cancer must be done through information, guidance, and education to the whole female population regarding risk factors and promotion of favorable health conducts.

Women must be oriented in the self-care of their breasts and importance of giving value and reducing risk factors when possible and promoting healthy lifestyles. The public sector and civil society must do the promotion through group and interpersonal communication.

This is the main principle that must be used to plan control measures and the development of all the possible measures that lead to the elimination of these because factors must be considered a health priority.

Primary prevention focuses on lifestyles to promote a healthy life and reduce the risk of breast cancer even when cancer cannot be avoided completely. The lifestyle includes physical activity, healthy diet and avoiding the use of tobacco and alcohol.

Secondary prevention or early detection:

Technical Standard (2008) states that early diagnosis through the study of asymptomatic women in the early stages is the most effective tool in order to reduce the mortality generated by breast cancer.

The objective of Secondary Prevention is to reduce cancer mortality, through actions used to have an early detection of malignant tumors. This group of actions is known as screening programs.

Screening or early detection, based on prevention, makes reference to the group of activities that look to detect the illness in healthy people before there is any clinical manifestation in order to adopt early treatment and reduce mortality by combining different diagnosis methods.

1.- Clinical breast exam:

It must be performed by a health professional and done in order to verify changes in the size and mobility of the breast, aspect of the skin or nipple, appearance of abnormal secretion, significant pain or presence of larger nodes in the axilla.

Women 40 years and older are recommended to have a clinical breast exam performed every year as control and prevention.

2.- Mammogram:

It is a very reliable and accurate method for the early detection of breast cancer in its early stage, when there is a larger likelihood for treatment. It is considered the “golden standard” for early detection of breast cancer.

The mammogram detects abnormalities that are not clinically perceptible, it outlines palpable masses and identifies possible irregularities related to the breast, it also shows abnormal nodes in the axilla.

It is recommended that every women 50 and above has a control mammogram done every two years and women with a risk of having breast cancer will have one performed after they turn 35 years old.

Primary Attention

Due to the barriers that Peruvian women have for their health, primary assitance is a fundamental resource for them in reference to their breast health.

The clinical breast exam is an exam performed by a health professional at a primary attention level. The clinical breast exam is a service that may be provided at a local level, it is very important to detect the presence of cancer at an early stage. This is done through the inspection and palpation, and always respecting the decency of the patient. It is a good opportunity to speak with a health provider regarding breast cancer and the risk of breast cancer, how frequent a woman should have a CBE done and when she needs to have a mammogram done. The inspection observes both breasts and tries to find asymmetries, lumps, deformations, retractions. Palpation is normally done with the patient lying on her back and if there is the sensation of a node, it is necessary to specify: its location, size, shape and borders, consistency, displacement and whether it is adhered to neighbor tissues and if the skin is engaged.

Screening programs may vary from country to country, followed by available resources, in regions or countries where a mammogram is not within reach of every woman. Early detection programs are currently limited and must be planned according to the resources of every region. The clinical breast exam is a primary assistance tool that, once done, is very useful for the early detection of breast cancer.

Tertiary prevention

Technical Standards (2008) state that Tertiary Prevention is used to carry out an early diagnosis of metastasis and suitable treatment.

Tertiary prevention of breast cancer must be done in necessary cases through reconstructive, esthetic and psychological rehabilitation of users that receive surgical treatment, chemotherapy, radiotherapy or hormonal therapy according to what is needed.

Self-exam (or self-recognition) of breasts

Nowadays, the official position of health authorities (such as the Work Group of USA, Preventive Services, Work Group of Canada regarding Preventive Health Assistance and the World Health Organization), is that there is not any scientific evidence that states a self-exam can save lives at a population level or allow women to detect cancer in its early stages (Corbex 2012). In Peru, an unpublished qualitative study states that the self-exam may present a barrier for the use of breast clinical services (Hayes-Constant 2011). The base of the evidence states that the self-exam is not the best solution for early detection of breast cancer.

Overall perspective of assistance model that includes CBE

Following the commitment of the National Plan for Prevention and Control of Breast Cancer, we are aiming for new approaches, based on evidence, strategies to reduce the growing burden of mortality and morbidity caused by breast cancer for women of low resources.

This collaboration in breast cancer proposes the introduction of a new assistance model which will do the following:

- Increase public awareness of the value of early detection.
- Work with existing infrastructure in the Ministry of Health.
- Increase connection between assistance and reference centers.
- Implement suitable screening to existing resources.
    - A health professional (physicians, obstetricians and/or nurses) performs exam at a local level (health posts and health centers)
- Take some diagnosis steps to intermediate referral levels in the health system.
    - Referral at a local hospital due to suspicious mass.
    - Referral at Oncological Network for women with a confirmed diagnosis.
    - Follow up at hospital after the treatment.

The proposal is to introduce and assess an assistance model based on women chosen from the lowest levels of the health assistance system, to have clinical breast exams performed by trained health professionals and followed by a referral of the woman with suspicion of masses at a hospital level for an assessment done by physicians trained in FNA.

Justification for the use of this assistance model

The justification for this model is the need of increasing access to screening and diagnosis. With this new module, women will not need to travel long distances to complete the first steps of the diagnosis. This gives a saving in time and money, reducing the amount of time spent outside of their homes and increasing access and culmination of the treatment. In order to reduce the barriers to breast health, this model may lead to the reduction of inequity for women in provinces, which have breast cancer.

The access to screening may increase in regions and women with low resources through the dissemination of alternative screening methods such as the clinical breast exam. The training of health professionals ensures women that they will receive an assistance of high quality. Finally, the access to early diagnosis will increase and create professional experience in FNA at a province level.

Insurance and possibilities for treatment

The Integrated Health System (SIS) has two types of insurances: a free one and an independent one

Under the independent SIS (which charges a minimum payment), the insurance only covers exams until the diagnosis of cancer. If the diagnosis is positive for breast cancer and the patient is not able to pay for the treatment, she can request social support at social services in the hospital and ask for a new assessment to obtain the free

SIS. Social services at the hospital will assess if the patient has or does not have the economic conditions to face the treatment.

Under the free SIS, besides only covering the exams until the diagnosis of cancer, there is extraordinary coverage for the treatment (which is also free). In order to receive this assistance, SIS will require a medical report for its evaluation. This process takes between 5 to 10 days. SIS assesses and approves the treatment and covers up to 1.5 UIT (Taxation Unit). The UIT for 2017 is S/4,050for which the SIS is able to cover up to S/6,075 in 2017.

UNIT 3: Normal anatomy of the breast

Key messages:

- Breast development, especially during the reproductive stage of life (after the birth of a human being).
- What is normal for mothers throughout their life?
- How can changes and normal development of breasts affect the screening?

General anatomy of the breast

Anatomy and physiology: The breast is located on the thorax wall between the sternium and medium axillar line.

A pentagonal area defines the perimeter of the breast; specific anatomic reference points are:

- Collar bone, by the top
- Side border of breastbone, central part
- Infrabreast fold, inferior
- Dorsal muscle width, side

· Imaginary line that connects side and upper reference points in the axilla.

Why understand anatomy?

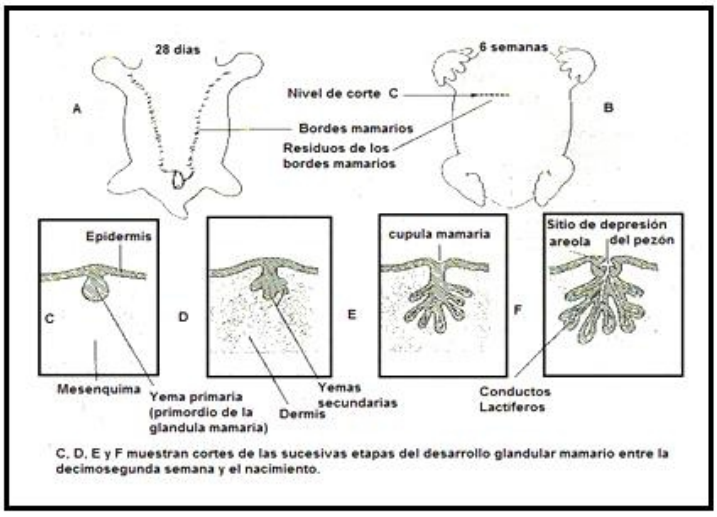
The comprehension of breast anatomy and physiology is fundamental to distinguish normal changes from abnormal changes of the breast during the life of a woman, to perform a detailed and complete medical exam, and to understand where cancer is originating from and possible sites of metastasis.

Changes in breasts throughout life

Embryology of the breast

The breast gland forms a cutaneous annex exclusive of mammals, which grows slowly during the embryo and infancy period and does not reach maturity until puberty with the beginning of reproductive age.

The development of the breast starts during the fifth week of the development of the embryo; a line of mills is developed from the axilla until the groin in the embryo branch. This band leads to the breast putline in the thoraxic area and returns to the rest of the locations. This explains why some women may find breast tissue or even additional nipples in some regions of the breast line.



In women the lack of constant stimulation with testosterone allows a channeling process of the epithelial ducts towards week 20-24, until the galactophore ducts appear. Weeks 32 to 40 may present a completely developed tubular system which may present a secretory histolgical aspect due to the stimulation with prolactine and maternal estrogen.

Estrogen starts growing during the childhood and progesterone helps glandular tissue to develop and mature.

As hormonal levels change throughout pregnancy; histoligically speaking, breasts become similar to pre puber women breasts. Minor alterations of the dynamic process of breasts, the cyclicalchange and involutin are generally considered benign disorders.

Development of the breast during puberty

In puberty, the breast grows and develops in parallel to other changes within this stage in life. The development occurs due to the effect of estrogen hormones and progesterone in the ovary.

In this stage you see the increase in the height of cells and the thickness of the epithelium and beginning of the formation of small epithelial buttons (future lobules) from terminal ducts. An increase of the periductal joint tissues density is observed. Cyclical hormonal stimulation continues with the growth of stroma and parenchyma (including a larger development of lobes), meeting a harmonious spatial distribution that ends with the characteristics of a breast in an adult.

At the initial statges, the increase of fat determines the appearance of a breast button which at the same time serves as a matrix or support for the future growth of the glandular parenchyma. It is important to know the characteristics and age of appearance of the breast button because it is a frequent reason for consultation in tenenagers given the fact that it is confused with a tumor.

Estrogens act by stimulating lactifere ducts while progesterone produces the growth in the alveolis.

There is the influence of the hormone of growth of Somatotrophine and Prolactine in the inner hypophosis. The Tyroxine hormone comes from the Thyroides and may have influence in the development of the mammogenic development.

After puberty, there aren´t any changes in the estroma and glandular tissue until the third trimester of the pregnancy time in which the glandular tissue is matures. There is a growing risk of breast cancer in women that do not meet the maturity of breast tissue or that have not had this step.

Changes (and how they feel) in breasts during the menstrual cycle

Breasts are more sensitive after puberty. Breast tissue is susceptible to hormones throughout the menstrual cycle. Estrogen and progesterone will fluctuate in function of the cycle; they reduce to low levels after the menopause. During the menstrual cycle there are changes in the volume of breasts and fat tissue especially in young women. There are also changes in the temperature of breasts, this usually increases with the ovulation. Many women experience an increase in sensitivity of women during the days before and after the menstruation cycle. Some women may experience an increase in the sensitivity of their breasts in the days immediately before and after the menstruation cycle. The nipple may be especially sensitive. There may also be a persistent sensation of breast congestion with a deaf or heavy pain. These changes have to do with the fluctuation of hormones. Swelling and premenstrual sensitivity probably occur in all women to a certain degree.

Changes during pregnancy

During a pregnancy, the breast experiences a considerable increase in size and there are significant changes. Gravidarum proliferation occurs due to the influence of Estrogens and Progesterone of placental origin, pituitary factors and thyroids similar to the ones during puberty but in a lower amount.

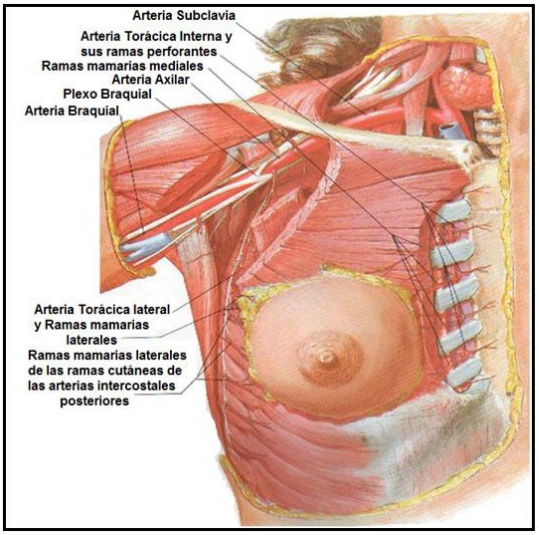
This stage includes a new placental element of great importance named the Lactogen-Placental hormone whose action consists in stimulating the growth of the breast.

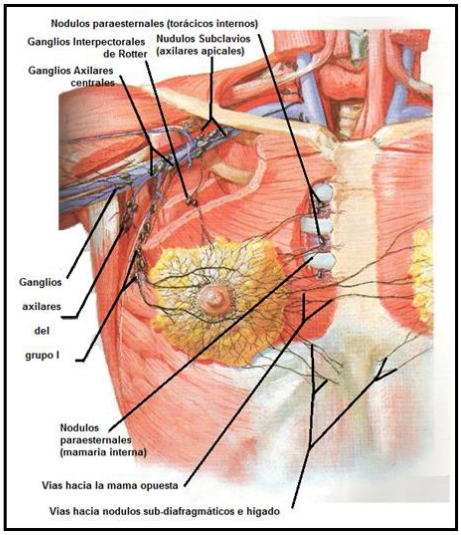
Normal variations in the breast

There are normal variations in the breast due to the characteristics of each person. There are variations of the aspect of the breast due to the age. In young woman who have never been pregnant, the projection is to have a conic breast. Breasts tend to start hanging with the years. There are also variations of size, shape, color and texture of the breast tissue skin. For example, one of the breasts may be ptosic.

Structure of the breast

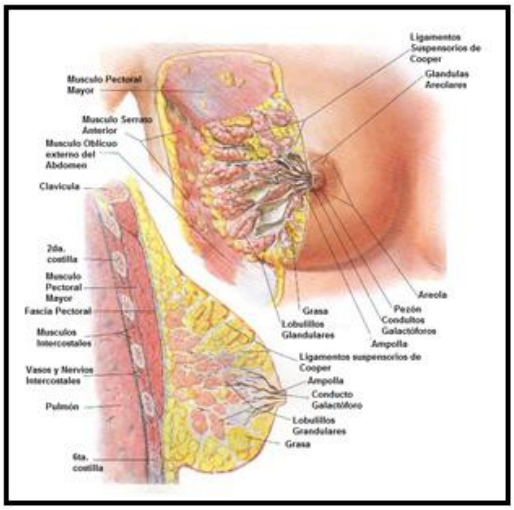
Tissues and structure of the breast: Breasts produce milk during the breastfeeding period. The breast is formed by four types of tissue: glandular tissue, ductal system, fibrous tissue and fat tissue. All tissues may lead to anomalies including cancer.





Glandular tissue:

Glandular tissue consists of functional elements of the breast whose purpose is to produce and store milk. The glandular part of the breast includes the lobules and ducts. The lobules and acino, structures similar to grapes, are released form the milk ducts. In breastfeeding women, the cells and lobules produce milk that is displaced through ducts: small tubes that transport milk to the nipple. The glandular tissue and fat vary due to the age and weight of women.



Ductal system:

This system transports milk to the nipple. The sequence pattern of structures that ramify from one conduct and drains toward the nipple. The number of segments may vary with a typical range from 8 to 12. The lactiferous ducts are tube connections between the lobules and the nipples that allow the exit of milk. The majority of benign and malignant pathologies are presented in the lobular unit of the terminal duct.

Fibrous tissue (stroma)

Fibrous tissue (stroma) provides support for glandular and ductal elements as well as architecture for the breast. The breast stays in its position due to the Cooper ligament, a fibrous fascia that extends transversally between the skin and the aponeurosis of the major pectoral providing a fibrous shell that sustains the breast lobules. The Cooper ligaments join the skin fascia and the major pectoral muscle. The texture and proportion of the fibrous stroma may vary during the life of a woman. This may be responsible of many changes in the form, size and projection with aging. Carcinoma in these ligaments may cause a formation of dimples known as “skin retraction”.

Fat tissue

Fat tissue is mainly found in the inferior and central part of the breast, there is more fat tissue with overweight individuals. The proportion of fat tissue and fibrous stroma varies with age and body composition.

Breast support tissue includes fat tissue and fibrous connective tissue which provide the size and shape of the breast. Any of these parts may experience changes: these may be benign (not cancer) or malignant (cancer). A large proportion of breast glandular dense tissue versus fat tissue makes it difficult to detect anomalies during the CBE and mammogram.

Muscles:

The two muscles located under the breast are the major and minor pectorals, these may sometimes make women believe breast tissue is mainly muscle or confuse muscle pain with breast pain.

Nipple - areola:

The nipple-areola complex has the epithelium darker than normal skin. This pigmentation is related to the level of estrogen and it is more noticeable in younger women rather than in older ones. The sudden and progresive retraction of the nipple is related to breast cancer.

Lymph system of the breast

The lymph system is one of the most important systems of the body due to the functions it develops for cleaning and the defense of the body. It is considered as part of the circulatory system because it is formed by ducts similar to capillaries which transport liquid named lymph that comes from the blood and returns to it. This system forms the second network of transportation of body fluids. The system is formed by lymph ducts of primary and secondary lymph organs. It covers four basic functions:

- The maintenance of osmolar balance in the “third space" (lymph space)
- It mainly contributes to the formation and activation of the immune system (body defenses)
- It recollects chyle from the intestinal content, a product with a high content of fat.
- It controls the concentration of proteins in the interstitium, the volume of interstitial liquid and pressure.

The lymph vessels connect the two breasts and drain by ducts through the axilla, breast bone and passing the collar bone. The most part of the lymph formed in the breast tissue is drained by the axillar nodes.

There are three levels of axillar lymph nodes:

Level 1: These nodes are located sideways to the side border of the minor pectoral muscle and inferior to the axillar vein.

Level 2: These nodes are located behind the minor pectoral muscle.

Level 3: These nodes are located in the center of the central border of the minor pectoral muscle.

Nodal groups around the breast

- Axillar
- Supraclavicular
- Infraclavicular
- Internal breast

Lymph nodes are normally not palpable; they are only felt when their volume is larger due to inflammation o metastasis.

UNIT 4: Anomalies of the breast

Key messages:

- Signs, symptoms, and changes in breasts may be caused by benign afections or breast cancer.
- There can be anomalies found in women of all ages; however, anomalies in younger women do not normally result in cancer.
- The CBE is a suitable tool to detect breast anomalies.

Most common clinical alterations

Throughout a woman's life she may experience a variety of changes and illnesses in the breast. These illnesses may be benign or malignant, it is important for the healthcare provider to understand the signs and symptoms of danger. It is important to notice that menopause brings many changes in the risk of breast illnesses. Young women may present a variety of breast illnesses however breast cancer is more common in older women when they approach and enter middle age and menopause stage.

Signs and symptoms of conditions in breasts

Changes in breasts may be caused by benign conditions or cancer. The most common symptoms are most likely caused by benign conditions. However, it is still important to talk to your doctor about any change you may observe in your breasts. Many symptoms of benign conditions are the same as those presented in cancer. It is difficult to differentiate benign and cancerous conditions based on symptoms alone. It is possible that some benign conditions do not cuase any symptoms and are detected during a mammogram or biopsy.

Masses or lumps

A benign condition frequently cuases a mass or lump, which area may not be as sensitive. A woman may find a mass while showering, during other daily activities or, during a self examination. If a woman is younger, the likelihood of having a benign condition is more likely.

a. In women younger than 30, the most common cause is a solid benign tumor called a fibroadenoma.

b. In women between 30 and 49, benign conditions (such as fibroadenoma, fibrocystic changes and atypical hyperplasm) are the most likely causes.

c. Cysts (non cancerous sacks that contain liquid) and non invasive cancers (such as on site ductal carcinoma) are more common in older women.

In any of these age groups, there is the possibility a mass can be cancer, although it is more likely to find this in older women. Independently from the age of women, masses and other changes must be revised to make sure it isn´t breast cancer.

The presence of many masses in both breasts is usually cuased by fibrocystic changes. Masses just as other symptoms must be considered alongside other symptoms the woman may have.

Redness and/or thickening of the skin

The redness or thickening of a skin area may have different causes. For example, breast inflammation known as mastitis is common in breastfeeding women and it is usually caused by an infection. However, it is important for a trained health profesional to examine any new redness or thickening, at least one type of breast cancer (inflammatory breast cancer) may be confused becaues it is very similar to an infection. It is sometimes difficult to distinguish the difference. This class of cancer grows quickly for which you must contact your doctor immediately if there is an infection that does not improve after being treated.

Pain

Some women feel pain or discomfort that is related to her menstrual cycle. This type of pain is more common during or around the week before the menstruation and it generally disappears once it begins. Many women with fibrocystic changes feel cyclical pain in the breast. It is believed that this is due to changes in hormonal levels.

Some benign afections of the breast such as breast inflammation (mastitis) may cause sudden pain not related to the menstrual cycle.

Tumoral benign illnesses

Benign tumoral illnesses may be ordered under three categories: Fibrocystic process, Fibroadenoma, Phyllode Tumor and other benign masses.

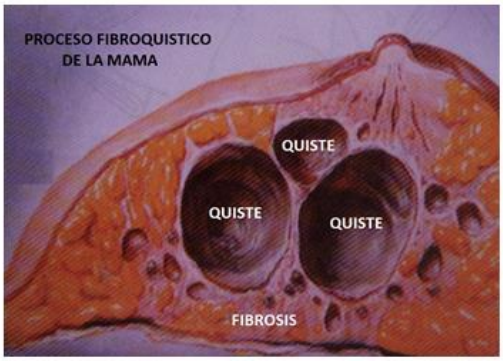
Fibrocystic process

The fibrocystic process includes a range of breast alterations that include glandular tissues (lobules and ducts) such as stromas. In the past, these used to be called "fibrocystic illness" since it affects at least 50% of women in a certain stage in their life. This is better defined as a process rather than an illness. It is more frequent in women in a fertile age however, it can affect women of all ages. The fibrocystic process is the most common benign affection.

When a fibrocystic tissue is observed under a microscope, there may be many different changes found. Most of these reflect the way in which the women's tissue has responded to hormonal changes each month and they have little importance. As suggested by the fibrocystic term, the two main characteristics of this tissue are fibrosis and cysts.

a. **Fibrosis:** Fibrosis refers to a large amount of fibrous tissue, the same material that form ligaments and scar tissue. The fibrosis areas have a rubber, firm, and hard consistency. Fibrosis does not increase the risk of having cancer and it does not need any special treatment.

b. **Cysts:** Cysts are round or oval sized sacks full of liquid. They are more commonly found in women between 40 and 49 years old, although they may be present at any age. Frequently, it is not possible to determine the difference between a cyst and solid mass with a clinical exam. Therefore, it is necessary to have an untrasound or fine needle biopsy (FNA) done to know what it is with certainty.



Breast Cyst Nodule, mobile, painful at touch, fluctuation due to liquid content. It may be caused by hormonal unbalance.	Fibrocystic Process in Breast Cyst. Cyst. Cyst. Fibrosis.

Cysts are originated with an accumulation of liquid inside the breast glands. Microcysts (microscopic cysts) are too small to be recognized by touch and can only be detected when examining the tissue through a microscope. If the liquid continues to add up, they will form macrocysts (cysts of larger size). These may be easily felt and may reach a diameter of around 2 to 5 centimeters. As they continue growing, this tissue may stretch and cause pain.

A young and mobile mass, especially if painful at touch, suggests the presence of a cyst. They normally grow and become more painful and evident just before the menstruation cycle. This is because of hormonal menstrual changes.

A Fine Needle Biopsy may confirm the diagnosis of a cyst and at the same time drain its liquid. The elimination of liquid may reduce the pressure and pain for some time, it is not necessary to extract the liquid unless it causes discomfort. If removed, the liquid may return. Having one or more cysts does not increase the risk of having cancer in the future.

Symptoms of a fibrocystic process

In most cases, typical symptoms of fibrocystic processes include pain and sensitive masses or thickened areas. These symptoms may change over time as women pass though different stages in the menstrual cycle. Sometimes, one of the masses may be harder or present other characteristics that induce to the concern of having cancer. When this occurs, it may be necessary to perform a fine needle biopsy or surgical biopsy to make sure that it is not cancer.

Most women with fibrocystic processes with or without symptoms do not rquire treatment, however it may be suggested that they follow a rigurous follow up. Women with light discomforts may find relief in support bras or pain killers. In a small number of women with painful cysts, the drainage of liquid with a needle may help relief the symptoms.

Some women report that the symptoms improve if they stop consuming caffeine and other stimulants included in coffee, tea, chocolate and, other beverages. Studies have not found that these stimulants have any significant effect in the symptoms.

Due to the fact that the inflammation in the last days of the menstrual cyle result to be painful for certain women, some recommend the reduction of intake of salt or taking diuretics (medication to eliminate salt or liquid in the body). However, these studies have not found effects on symptoms.

Many vitamin supplements have been suggested but none have proven their utility yet and some have dangerous side effects if taken in large dosis.

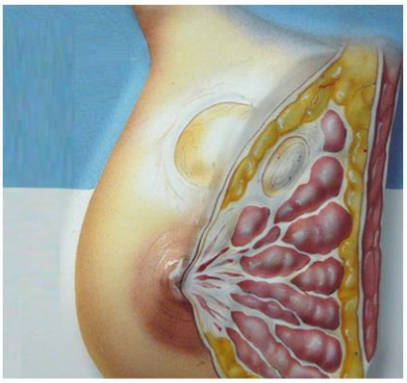
Some recommend hormones, such as oral contraceptives as well as tamoxyphen and androgens. However, these hormones are generally only used in women with severe symptoms becuase they may present strong side effects.

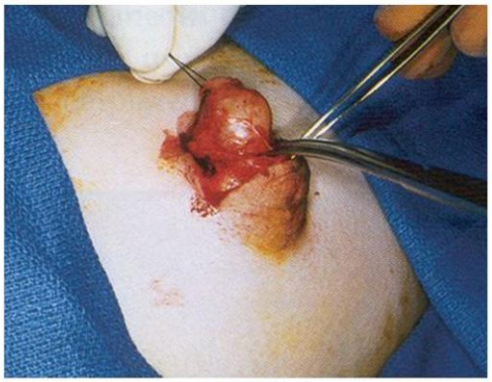
Fibroadenomas

Fibroadenomas are benign tumors formed by glandular and stromal (connective) tissue. These are more frequent in women between the ages of 20 and 39, althought they may appear at any age. The use of contraceptive pills before turning 20 years old is related to the risk of fibroadenomas.

Some fibroadenomas are too small to be felt and can only be seen with a microscope; others have many centimeters of diameter. These tend to be round and present borders that are different than the ones of surrounding tissue. They are frequently felt as a “ball” inside the breast. They move inside the skin, are generally firm and do not cause sensitivity at touch.

Some women only have one fibroadenoma, but others may have many fibroadenomas and may be diagnosed with a Fine Needle Biopsy or Biopsy by Puncture. Many of them are known as simple fibroadenomas. These look the same when observed under a microscope and they do not increase the risk of cancer.





Some fibroadenomas contain other components (macrocysts, ademosis, calcifications or apocrine changes). Women with these complex fibroadenomas have a slightly higher risk of cancer (approximately 1½ to 2 times the risk in comparison to women that do not have changes).

Their extirpation is recommended especially if these continue growing or the shape of the breast changes. Sometimes (especially in medium aged or elderly women), these tumors stop growing or even reduce in size, without receiving any treatment. In this case, if there is the certainty that the masses are actually fibroadenomas and not cancer, these may be left under observation to make sure they do not continue growing. This focus seems useful for women with many fibroadenomas that are not growing. In these cases, their extirpation may require the

elimination of a considerable amount of normal surrounding breast tissue which would cause a scar that would change the form and texture of the breast. This may make the interpretation of physical exams and mammograms in the future even more difficult.

It is important that women that have not had their fibroadenomas removed have periodic breast exams done to ensure that they are not growing. Sometimes, after the surgical extirpation of a fibroadenoma, a new one or several new ones grow. This means a new fibroadenoma has been formed and it does not mean the previous one disappearred.

Phyllodes Tumors and other benign masses

Phyllode Tumors

Phyllode breast tumors are less frequent and contain two types of tissues: stromal tissue (connective) and glandular tissue (lobule and duct) of the breast. It is more frequent in women between 30 and 49 years of age (with more age than with fibroadenomas), although they may appear at any age.

Overall, tumors feel as masses that do not cuase pain although some may cause it. These may grow quickly and stretch the skin. These tumors are normally difficult to differentiate from fibroadenomas in imaging studies or even fine needle biopsies or thick needle puncture biopsies.

When observed under a microscope, the main difference between fibroadenomas and phyllode tumors is that phyllode tumors present an overgrowth of connective tissue. The cells that form connective tissue may have a normal aspect when observed under a microscope. Based on the appearance of the cells, phyllode tumors may be classified as benign (non-cancerous), malignant (cancerous) or limiting (more abnormal appearance than benign tumors but not as malignant). These types of tumors may behave in a very different manner.

Phyllode tumors are usually benign, but in few cases they may be cancerous. Less than 5% of these tumors spread to other areas such as the lungs or return in different areas after treatment. Phyllode benign and malignant tumors were previously known as phyllode cystocarcinomas. Sometimes, phyllode tumors (even benign ones) may return to the same place if they are removed without taking some normal surrounding tissue. Therefore tumors are treated with the removal of the mass and an area around the tumor of 1 to 2 centimeters of the normal tissue around the breast.

Malignant phyllode tumors are treated with extirpation, together with a wide range of normal tissue or a mastectomy (total removal of the breast), if necessary. Malignant phyllode tumors do not respond to hormonal therapy and have less likely to respond to chemotherapy or radiotherapy than most breast cancerous tumors. Phyllode tumors that have spread to distant regions are frequently treated as sarcomas (soft tissue cancer) and not as breast cancer.

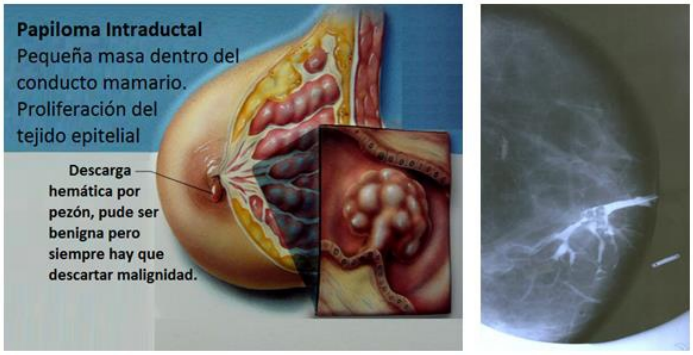
Since these tumors may return, it is generally recommended that there is a rigorous follow up with frequent exams and studies by images done after the treatment.

Intraductal papillomas

Intraductal papillomas are benign tumors that grow inside the breast ducts. Solitary papillomas or soiltary intraductal papillomas are isolated tumors that frequently grow in large lacteous ducts close to the nipple. These are a common cause of clear or bloody secretion, especially when coming from one breast. They may feel as a small lump under or next to the nipple. Solitary papillomas do not increase the risk of breast cancer unless they contain other changes such as atypical hyperplasm.

Papillomas may also be found in small ducts of the breast far from the nipple. In this case, there are frequently many growths (mutliple papillomas). There is less proabability that these tumors cause secretion of the nipple. Contrary to solitary papilllomas, multiple papillomas are related to an increased risk of breast cancer.

Papillomatosis is a type of hyperplasm in which there are very small areas of celular growth inside the ducts, but these are not focused as papillomas are. This condition is also related to a slightly higher risk of breast cancer.



Intraductal Papilloma

A small mass inside the breast duct. Proliferation of epithelial tissue.

Hematic discharge through the nipple, it may be benign, but a malignancy must always be discarded.

Common treatment consists in removing the papilloma and a segment of the duct where it is found in. This is usually done through an incision (cut) in the border to the areola (darkest area around the nipple).

Other benign masses may be fat necrosis and milk cysts in breastfeeding women.

Fat necrosis or oily cysts

Fat necrosis appears when an area of the fat tissue of the breast is damaged. This is normally due to a lesion in the breast. It may also appear after a surgery or radiotherapy. As the body repairs the damaged tissue, it is being replaced by a firm scar tissue.

With many cancerous tumors also being firm, the areas of fat necrosis with scars may be difficult to differentiate from cancerous tumors through an exam. It may also be difficult to establish a difference in a mammogram. A biopsy with a needle, or in ocassions a biopsy by division, may be necessary to determine whether it is cancer.

Fat necrosis is more common in women with larger breasts. It does not increase the risk of a woman developing breast cancer.

Certain fat cells may have a different answer to lesions. Instead of forming scar tissue, the cells die and release their content. This forms a deposit with the shape of a bag of fat liquid named oily cyst. These can be diagnosed through the method of fine needle aspiration. This may also serve as treatment although it is not usually necessary unless the cyst causes certain discomfort.

Non Tumoral Illnesses

Secretion in Non-Hematic Nipple

The secretion of flow in the nipple is a situation that causes anxiety in women. The majority of nipple flows are caused by benign conditions or physiological reasons; however, cancer must be discarded. A secretion can be characterized by the following: if it is spontaneous or provoked (when pressing the areola or nipple), if it is unilateral or bilateral (a breast or both), if it is uniductal or multiductal and by color or type of secretion.

Different types or secretion can be seen milky, bloody and others. The spontaneous secretion of the nipple is not very common, but by squeezing the nipple you may obtain fluid in almost any woman of any age (McCool 1998). Many secretions by the nipple is physiological and is not a symptom of pathology. A physiological discharge is usually bilateral and not spontaneous. There are two other types of spontaneous secretion that do not represent a carcinoma. Galactorrhea is a spontaneous secretion of milk color which may be a symtpom of a hormonal illnes.

Hematic nipple secretion

Bloody nipple secretion accompanied by tumoral mass results to be breast cancer suspicious such as intraductal carcinomas. It is rarely presented with breast pain. The intraductal papilloma (benign) is the most frequent cause od bloody secretion without a palpable mass, generally spontaneous uniductal, at 1 or 2 cms from the areola and more frequently in pre menopausic women. Treatment is the division of the duct.

Ductal ectasia

Ductal ectasia also known as breast ductal ectasia. It is a common condition that tends to affect women between 40 and 50 years old. This occurs when a duct in the breast dilates and its walls become denser which may cause it to close and have an accumulation of liquid.

The ductal ectasia may cause serose, bloody, greenish, or black and thick secretion. The nipple and surrounding tissue of the breast may be painful and red at touch. The nipple may be retracted inwards. Sometimes the scar tissue around the normal duct causes a hard lump that may be confused with cancer.

In ocassions, this condition improves without any treatment, or with warm compressions and antibiotics. If the symptoms persist, the abnormal duct may be reomved through an incision made in the border of the areola called the Extirpation of Terminal Ducts.

Hyperplasm

Hyperplasm (also known as epithelial hiperplasm or proliferative breast illness) is an over production of the cells that protect the ducts or lobules. When hyperplasm affects the duct, it is called ductal hyperplasm or ductal epithelial hyperplasm. When this affects the lobule, it is called lobular hyperplasm. The atypical hyperplasm (hyperplasm with atypia) is a term used to describe the cells that are slightly diffused depending on how they are set.

Overall, hyperplasm is diagnosed thorugh a biopsy by puncture with a thick needle or surgical biopsy. Based on the aspect of cells in the microscope, hyperplasm may be grouped as:

- **Low hyperplasm:** it does not increase the risk of breast cancer.
- **Uusal type hyperplasm** (without atypia): also known as usual hyperplasm: the risk of breast cancer is around 1½ to 2 times more in comparison with a woman that does not have anomalies in the breast.
- **Atypical hyperplasm** (atypical ductal hyperplasm [ADH] or atypical lobular hyperplasm [ALH]): the risk of breast cancer isa round 4 to 5 times more in comparison with a woman that does not have anomalies in the breast.

A hyperplasm diagnosis, especially atypical hyperplsam, generally means that the patient will require going to her doctor more frequently. This may imply more frequent breast exams and a special effort to have mammograms done on an anual basis because some types of hyperplsams are related to a higher risk of cancer in the future.

Adenosis

In the adenosis condition, breast lobules are enlarged and contain more glands than normal. Adenosis is frequently found in women with fibrocystic changes. There are different names for this condition, including general adenosis, tumoral adenosis or adenoma. Although some of these terms contain the term “tumor”, the condition is benign, and it is not cancer.

Sclerosant adenosis is a special type of adenosis in which the lobules of larger size are diffused by the fibrous tissue of scar appearance. If enlarged lobules are detected close to eachother, these may be large enough to be palpated.

Given that adenosis may be confused with cancer, it generally needs a biopsy to differentiate them.

Overall, the fine needle aspiration biopsy of these masses or lumps may show if these are benign. A biopsy with puncture with a thick needle generally identifies the mass as adenosis but, sometimes, a surgical biopsy is required to ensure it is not cancer.

Some studies have found that women with sclerosant adenosis have a higher risk of cancer (around 1½ to 2 times the risk of women without changes in their breast).

Nipple eczema

An areola and nipple eczema may be due to an allergic process that does not constitute a severe illness, but it may be a discomfort. However, it is necessary to perform a differential diagnosis with more delicate lesions such as the Paget Illness (On Site carcinoma) or a cutaneous manifestation of breast cancer and at the minimum suspicion, there must be a biopsy performed in that area of the skin.

With the Paget Illness, the area of the areola and nipple show an eczematous status, therefore there is erythema, vesicles. The areas are not well defined, of chronic evolution and very itchy. Any patient with a unilateral eczema of the nipple, with over 6 months of evolution with little or no response to treatment must make us suspect of a Paget Illnes; for which this hystological study is mandatory, remember that behind this eczema there may be a Breast Carcinoma hidden.

Infectious

Mastitis

Mastitis is a breast inflammation. It is frequently caused by an infection that affects women that are breastfeeding although it may happen to any woman. The opened skin or opening in the nipple may allow bacteria to enter in the breast duct where it may grow. The white cells in the body secrete substances to fight the infection. This causes inflammation and an increase in blood flow. The area may feel pain, de red or hot at touch. Other symptoms may include fever and headaches.

Mastitis is treated with anitbiotics. In some cases, there could be anabscess formed in the breast (accumulation of pus). Abscesses are treated with the drainage of pus, through suregery or the use of a needle (usually guided by an ultrasound), to later administrate antibiotics.

Mastitis does not increase the risk of a woman having breast cancer. However, a rare type of cancer known as inflammatory breast cancer causes symptoms like those of mastitis and it may be confused with an infection. If mastitis is diagnosed and treatment with antibiotic is not working, the person may require a biopsy to make sure it is not cancer. This type of cancer may spread quickly. Therefore, the person must not wait to make an appointment with the doctor if she still presents symptoms after the treatment with antibiotics.

Other breast infections

Breast tuberculosis

Breast tuberculosis is an uncommon condition; it may be primary or more commonly secondary. The diagnosis is based on the microscopic identification of acid-alcohol ressistant bacillus or the growth of Mycobacterium tuberculosis in culture. There are aslo serologic diagnosis methods such as ELISA, with a specificity from 86,4 to 97,2% and the Polymerase Chain Reaction Test. Given that the isolation of bacillus is difficult, the diagnosis may be based on the hystopathological findings and the positive response to treatment.

The most common form of TBC is an abscess result of an infection in a tuberculous cavern with an acute pyogene agent such as S. aureus. An open biopsy is frequently required to establish a diagnosis. Mammogram findings are not specific. In ultrasounds, the findings of abscesses with sinuous tracts and hypoechoic masses with internal mobile echos and posterior reinforcement help the differential diagnosis. Based on clinical, imaging and hystopathological findings, breast tuberculosis can be classified in three types: nodular, disseminated and sclerosant tuberculosis. The nodular one is the most common and it is characterized by a lesion of slow growth with or without lymphadenopathy.

At the moment of the clinical exam, the woman has a painless or almost painless tumor that may have stayed this way throughout a long period of time, until the skin ulcerates causing much pain; before these symptoms appear, it may be impossible to differentiate it from cancer. Mammograms show an oval or round image, it is dense with diffuse margins, non differentiable of a malingnant lesion. The disseminated form also called diffused, is characterized by the coalescence of multiple focus in breast tissue that may form fistulous tracts and skin ulcerations. The breast feels hard, the skin is thickened, tense and painful.

Imaging studies show a diffuse increase in the density and thickening of the skin very similar to the inflammatory carcinoma and lymphadenopathy. In the sclerosant type, there is a dominant fibrosis mainly in woman of advanced age. The evolution is slow, and the nipple secretion is uncommon. The breast is hard due to the abundant fibrous tissue and the nipple is retracted, making it difficult ot differentiate from cancer. The mammogram shows an increase in the density, reduction of breast volumen, thickening of skin and, nipple retraction. The tuberculous mastitis may be the first manifestation of the Acquired Immune Deficiency Syndrome (AIDS). The treatment is surgery and antituberculous chemotherapy.

Risk of developing cancer in relation to benign illnesses

As previously stated, some benign breast conditions are related to a higher risk of breast cancer while others are not. Doctors frequently divide the benign breast conditions in three general groups based on whether the cells are being multiplied (proliferative) and if any abnormal cells or pattern of cells (atypia) exist:

- **Non proliferative lesions** seem to not increase the risk of cancer.
- **Proliferative lesions without atypia** slight increase in the risk of cancer.
- **Proliferative lesions with atypia** increase the risk of cancer.

On proliferative lesions

These conditions are not related to the overgrowth of breast glands. They do not seem to affect the risk of cancer, in case they do, the risk is very low. These include:

- Fibrosis
- Cysts
- Light hyperplasm
- Adenosis (non sclerosant)
- Simple fibroadenoma
- Phylloide tumor (benign)
- One papilloma (solitary).
- Tumor of granular cells
- Fat necrosis
- Mastitis
- Ductal ecstasis
- Lumps or benign tumors (lypoma, hamartoma, hemangioma, hematoma, neurofibroma).

Proliferative lesions without atypia

These conditions are related with the growth of cells in the ducts and lobes of the breast tissue. The following seem to slightly increase the risk of breast cancer in a woman (from 1½ to 2 times in reference to usual risk):

- Uusal ductal hyperplasm (without atypia).
- Complex fibroadenoma.
- Sclerosant adenosis.
- Multiple papillomas or papillomatosis.
- Radial scar.

Proliferative lesions with atypia

These conditions are related to an excessive growth of the cells in the ducts or lobes of the breast tissue, the cells do not look normal. The following can increase the risk of breast cancer approximately 4 to 5 times:

- Atypical ductal hyperplasm.
- Atypical lobular hyperplasm.

Breast Cancer

There is a diversity of tumors that may arise for breast glands; this is due to the wide histological variety it presents and the clinical behavior it has in benign and malignant nature.

Characteristics and suspicious signs

To identify and diagnose the most common clinical anomalies, you must recognize the clinical characteristics of the benign and malignant tumors of the breast gland.

CHARACTERISTICS	BENIGN	MALIGNANT
Consistency	Soft	Petrea
Mobility	Movable	Fixated to neighbor planes
Borders	Exact	Not well defined
Surface	Regular	Irregular
Pain	Present	Absent (at the beginning)
Bilaterality	Ocassionally	Uncommon

Suspicious cutaneous signs of malignant lesions of the breast gland:

1. Breast lumps or tumors
2. Umbilication and changes in the nipple direction
1. Skin retraction
2. “Orange peel skin”
3. Cutaneous erythema
4. Cutaneous ulceration
5. Nipple secretion
6. Increase of superficial venous network

Hystological types

The WHO classifies breast cancer based on its place of origin (ductal or lobules) or its character (on site or invasive) and structural pattern.

Not invasive: On Site

- Type: Intraductal, Lobular; Subtypes: Cribiform, Solid, Papillar, micropapillar, comedocarcinoma.
- Hystological grade: based on the grade of nuclear atypia as low, moderate, or high, and based on the presence of necrosis.

Invasive:

- Ductal infiltrating carcinoma (70-80% cases)
- Infiltrating ductal carcinoma with an extense intraductal component (CIE)
- Infiltrating lobular carcinoma
- Mucine carcinoma
- Medular carcinoma
- Papillar carcinoma
- Tubular carcinoma
- Cystic adenoide carcinoma
- Secretor carcinoma (juvenile)
- Apocrine carcinoma
- Cribiform carcinoma
- Metaplasic carcinoma (scaly, fusocellular, cartilage, bone).
- Pager disease of the nipple (with/without infiltrating carcinoma)
- Inflammatory carcinoma
- Others (lymphomas, sarcomas...)

Diagnosis

A surgical biopsy is recommended to be able to dispose of histological material for the anatomy-pathology study which is the diagnosis that will provide guidance regarding the treatment to follow.

Natural history of breast cancer

“Within the natural history of this cancer, it is normal to have women between the ages of 50 and 55 discover a nodule or lump in one of the breasts, generally without pain and the size of an olive, of firm consistency, unprecise borders which ocassionaly produces a retraction in the skin or nipple. Usually, after 6 months the nodule has doubled in size and after a year, the axilla may present a nodule that increases in volumen and causes problems in the movement of the arm.

At the same time, the primary tumor causes an edema in the skin and adheres to the thorax wall. Many months later, the breast suffers an ulceration in the area of the tumor, the axilla nodes become prominent and there are frequently signs of metastasis such as coughing, dyspnea, bone pain especially in the spine or any other location. During this advanced phase, there are aslo supraclavicular nodes on the same side of the primary tumor.

In addition, the natural history of this cancer states that it is a long process until it becomes invasive and consequently, the organized programs for detection of breast cancer which may reduce the incidence and mortality of the illness in acountry.” (Oncological Technical Standard for Prevention, Detection and Early Diagnosis of Breast Cancer at a National Level, 2008).

The forecast of breast cancer is well documented in relation to the size and grade of the tumor in which the lymph nodes are involved (Harris, 1996).

Unit 5: Clinical Breast Exam

Key messages:

- Most women with breast cancer do not have a risk factor.
- The most important factor is age: 40 years and older.
- The CBE is important to detect tumors in women that do not have access to mammograms; evaluate masses detected by women and examine women even if there are not any symptoms.

Clinical Breast Exam

The clinical breast exam (CBE) is an efficient method for the early detection of problems in breasts, especially for women that do not have access to mammograms. Early detection may improve the forecast and extend treatment options. Previously, the mastectomy was the most common treatment form; today you can find therapies that conserve the breast if cancer is detected in early stages.

The CBE is important for the detection of masses in women 40 and older even if they do not present any symptoms; it is also used to evaluate tumors found by women, masses in women that do not have access to mammograms, intreval cancers and massess that are not observed in mammograms (there are some massess that can be touched but cannot be detected with a mammogram). Performed in a careful and detailed manner, the CBE is a very powerful tool in the fight against breast cancer and it is possible that it may prevent death caused by this cancer. Sensitivity and specificity for detection varies with the skill and experience of the examiner and the individual characteristics of each breast. The skills in CBE may lead to the detection of smaller tumors.

The CBE is a complex skilll that involves three components:

1. Cognitive (visual inspection).
2. Sensorial (palpation and pressure).
3. Motor (search pattern).

In addition to these skills, the CBE is a procedure that requires the healthcare profesional to manage a series of important steps. Before performing the breast exam, the provider must have the verbal consent of the patient. It is also fundamental to take enough time for the woman to share her symptoms and discomforts if there were any, as well as the performance of the exam to detect anomalies. An inadequate clinical breast exam gives the woman a false sensation of safety. Performing a deeper clinical breast exam, especially in the search pattern, may result in a personal satisfaction of knowing that there is quality assistance and help in detecting breast cancer at an early stage when treatment options are better.

Medical History

The patients' medical history is a tool that the provider may use as a guide for the CBE process. The medical history of a patient is a base of communication and follow-up between providers when a woman passes through each level of services and assistance. Therefore, it is essential to document the medical history with all the information discovered during the anamnesis and the exam itself. A medical history identifies asymptomatic women from symptomatic ones and helps to identify the risks of breast cancer in a patient, it also helps determine whether a biopsy, other service of detection, or diagnosis is required.

The Medical History includes the following parts (those in bold have a importance for the health provider that performs the clinical breast exam):

1. **General data.**
2. **Anamnesis.**
3. **Breast history.**
4. **Personal and family history.**
5. **Clinical breast exam.**
6. **Clinical impression.**
7. FNA performed.
8. Post FNA control.
9. Complementary studies.
10. Definitive diagnosis.
11. **Management.**
12. **Name of staff, Seal and Signature.**

Unit 7 will explain the use of the patients' Medical History in a detailed manner. Overall, the health provider must understand the medical history as a part of the CBE process, during which the provider will obtain information from the patient and register that information as well as any findings from the exam and next steps in treatment.

Once the Medical History is read by a provider that did not perform the procedure, he/she must be able to gather important information such as: CBE frequency, data and characteristics of the palpable mass such as the date in which the mass was discovered, its location, size (measurement in two dimensions), if the mass is painful or not sensitive, presence of changes in the menstrual cycle, and changes since the date of discovery. If a woman reports the self detection of a mass in the medical history, it is essential to document where the exactly mass is located in order to guarantee a suitable follow up.

Another utility of the medical history is the assessment of personal risks for breast cancer. Although it is important to gather information about the potential risk factors, given the advances in breast cancer research, we now know that the majority of women diagnosed with breast cancer do not always have a risk factor; it is important to communicate to a woman that age and sex are the most important factors.

Known factors of personal risk (inorder of importance) are:

1. **Age:** The risk of breast cancer increases with age. Women between the ages of 40 and 65

2. **Personal history:** Ask about previous breast cancer problems, women who have had breast biopsies have a higher risk of having breast cancer, especially if the biopsy showed a change in the breast tissue known as atypical hyperplasm.
3. **Family history of breast cancer** (breast cancer in especially the mother, sister, or daughter), breast cancer in first grade family increases the risk. However, this increased risk does not mean that women with direct family history will neccesarily have breast cancer. The most important thing is that the breasts of these women are strictly monitored.
4. **Reproductive history:** There is a slight increase in breast cancer for women that have not had children or if they had any, it was after they turned 30 years old and in those women that have not breastfed. In addition, the risk increases if the first menstrual cycle was at an early age (before turning 12 years old) or if the woman has not stopped menstruating until the age of 53-55.
5. **Lifestyles:** Women with a diet rich in animal fat and lower in vegetables, fruits, and fish have a higher frequency of breast discomforts and breast pathology. There is an increase in breast problems for women who smoke and those that consume an caffeinated beverages often.
6. **Environmental exposure/radiation.**

Many women are not well informed about their own risk or the risk of other people such as minor families. To understrand their own risk, many women look for tangible factors (bruises or old wounds) as the cause of breast cancer. In addition, they may make poor decisions about risk based on emotions, information found in media, or discussions with friends and family.

The overestimation or underestimation of risk may lead to anxiety and stress and the underuse or overuse of health services. When conducting a medical history, health providers must help women classify information regarding risk and choose suitable strategies for her regarding her age and symptoms.

Clinical breast exam technique

The basis of the clinical breast exam includes: 1. A visual inspection of the breasts (which include a static and dynamic inspection) and 2. A breast palpation (in a sitting and lying position).

Visual Inspection

The inspection is performed with the patient sitting with her thorax and arms uncovered under adequate lighting. The visual inspection is divided in static and dynamic.

For static inspection, the patient will sit with her upper limbs hanging in a relaxed position. The health provider observes the data regarding the shape, volume, symmetry, lumps, sinking, or changes in skin coloring that lead to a suspicion of a breast lesion.

STATIC INSPECTION	
IMAGE Sitting position with both arms on the side. Ensure good lighting.	Observe without touching: • Symmetry • Nodules • Adherence to the skin • Nipple retraction • Ulceration • Color • Nipple secretion

In the dynamic inspection, the patient is in a sitting position with her hands placed over her waist; the provider will observe if there is any abnormal appearance in the breasts and the provider will see if this movement makes the presence of any tumoration noticeable. In addition, the patient is asked to lean forward and the provider will assess the condition of the breasts, looking for any of the abnormal characteristics previously mentioned.

DYNAMIC INSPECTION	
IMAGE Sitting position with hands pressing the waist. Ensure good lighting.	Observe without touching: • Symmetry • Nipple displacement • Nodules • Adeherence to skin • Nipple retraction

The patient is finally asked to return to her initial position and place her hands behind her neck with her elbows extended.

DYNAMIC INSPECTION	
IMAGE Sitting position with hands behind the neck. Ensure good lighting.	Observe without touching: • Symmetry • Nipple displacement • Nodules • Adherence to the skin • Nipple retraction

The following clinical signs may be found by using the inspection:

1. Umbilication and changes in the nipple direction: Inflammation and infections of the nipple such as galactoforitis. If there is not any history, suspect malignant breast pathology.
2. Retraction of breast skin: Cutaneous skin that indicates a fibroblastic alteration. This is found in carcinomas close to the skin or in secondary to traumatism (fat necrosis).
3. Changes in skin coloring: Orange peel skin is a characteristic in tumors that invade the skin asuch as an inflammatory tumor where there is infiltration to subdermal lymph vessels. Other color changes are due to acute inflammatory or infectious processess such as abscesses, mastitis, ductal ecstasia, and infected galactocele.
4. Secretion of fluid through the nipple.

Palpation

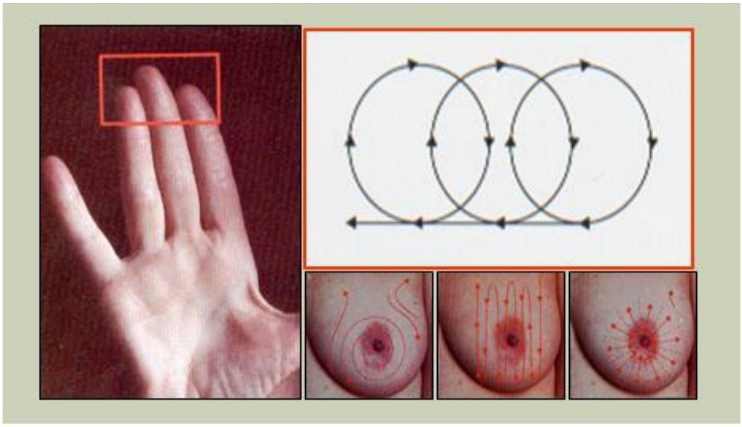
Like the visual inspection, the palpation is done in two positions, sitting and in a dorsal decubitus position.

For a sitting palpation, the patient will sit with her arms placed behind her neck.

PALPATION: SITTING	
IMAGE Sitting position with arms raised Ensure good lighting.	• Exploration of left breast (upper quadrants), with the right hand of the explorer and the left hand as the base. • Search of tumors. • Identify them by quadrants amd clockwise direction. • Procede in the same way in the right breast.

The provider palpates the breasts with his/her finger pads in a soft and methodic manner to look for existing lesions. The exploration begins by holding the breast between both hands, trying to identify any abnormalities, and later pressing the breast gland softly against the chest wall.

PALPACIÓN: METODOLOGÍA



During the sitting palpation, the provider must inspect two regions of the thorax: the axillar hole and the clavicular region. For the axillar hole palpation, the patient must have her left hand take the left forearm of the explorer who is palpating the axillar region with his/her right hand. The same is done for the right axilla, the patient takes the right forearm of the explorer with her right hand and the explorer palpates with his/her left hand. The exploration of the axillar region is done in a sitting position, the four fingers of the hand are taken to the vertix of the axilla and pressed over the chest wall softly towards the lower part in order to identify nodules.

PALPACIÓN: AXILA

PALPATION: AXILLA	
IMAGE Sitting position with hands to the sides of her body Ensure good lighting.	• Bend the left arm of the patient and place it over the left forearm of the examiner.

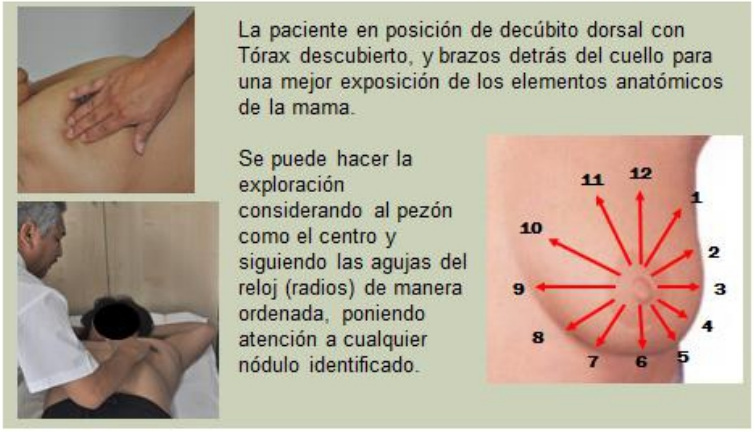
Ensure good lighting.	• Introduce the fingertips in the axillar hole. • Identify the presence of nodes: size, number, mobility, whether they are close to eachother or to the chest wall. • Procede in the same way with the right axilla.

For the palpation of the clavicular region, we must consider the region to be divided in two parts: supra and infraclavicular. In advanced stages of metastasic cancer, metastasic nodes can be in these regions. A provider must not refuse to explore this region. The palpation is done with the thumbs, with the head leaning slightly forward to relax the muscles of the neck and identify a nodule in a suitable manner.

PALPATION: SUPRACLAVICULAR REGION	
IMAGE Sitting position with hands on the sides of her body. Ensure good lighting.	• Introduce the finger tip in the left supraclavicular hole. • Identify the presence of nodules: size, number, mobility, if they are close to eachother. • Procede in the same way at the right supraclavicular region.

After the sitting palpation, the palpation must be done in a dorsal decubitus position.

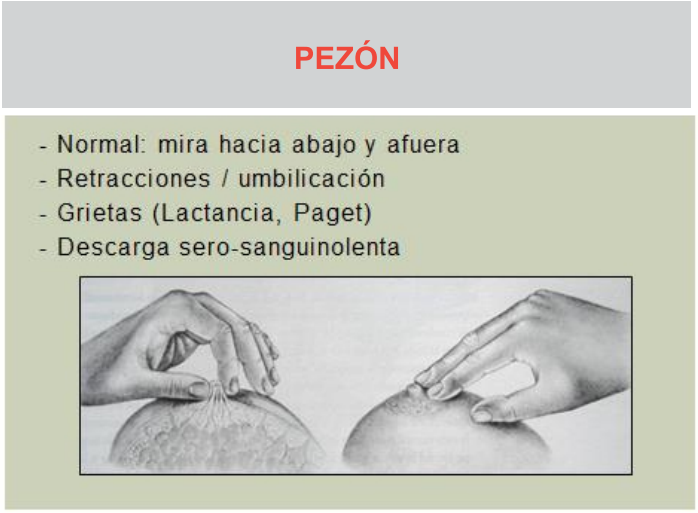
PALPACIÓN:



PALPATION
The patient in dorsal decubitus position with an uncovered thorax and arms placed behind her neck is a better position for the exposure of anatomic breast elements. The exploration can be done by considering the nipple as the center and following the needles of the clock (radio) in an ordered manner, putting attention to any identified nodules.

It must be done in a soft, digital, and methodically lead manner. The patient is placed in a dorsal decubitus position with an uncovered thorax and her arms behind her neck to have a better exposure of the breast anatomic breast elements. The provider will view the anatomic area to be explored, dividing the breast in quadrants, obtaining two upper and two lower quadrants or two inner and two outer quadrants. We also have the areolar region and breast tail or Spencer tail region.

In order to explore, the provider must consider the nipple to be the center, the breast is palpated following the needles of the clock, quadrant by quadrant, and palpating from the center and outwards in an ordered manner, putting attention to any identified node. To locate masses and other abnormalities, the health provider must be guided based on the needles of the clock and he/she must detail the localization in a specific radio or distance in centimeters (cms) from the nipple. The areola-nipple complex must be inspected carefully to assess the subtle changes in the epithelium and detect the presence of retro areolar masses.



NIPPLE
• Normal: look downwards and outwards • Retractions/umbilications • Cracks (lactation, Paget) • Sero-bloody discharge

It must be done in a soft, digital, and methodically lead manner. The patient is placed in a dorsal decubitus position with an uncovered thorax and her arms behind her neck to have a better exposure of the breast anatomic breast elements. The provider will view the anatomic area to be explored, dividing the breast in quadrants, obtaining two upper and two lower quadrants or two inner and two outer quadrants. We also have the areolar region and breast tail or Spencer tail region.

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Unit 6: Diagnosis and Management Algorythm

Key messages:

- The diagnosis does not occur at a local provider level, however it is important that health providers understand this model in order to manage patients correctly and provide them adequate information about the next steps of their assistance.

Management algorythm for detection and diagnosis of breast cancer

Description of referral flow

Each assistance level performs activities related to the management algorythm for detection and diagnosis of breast cancer.

Health facilities of first level of assistance are responsible for the referral of possible or suspicious cases to the level II hospital or assistance center where detection can be made through an FNA.

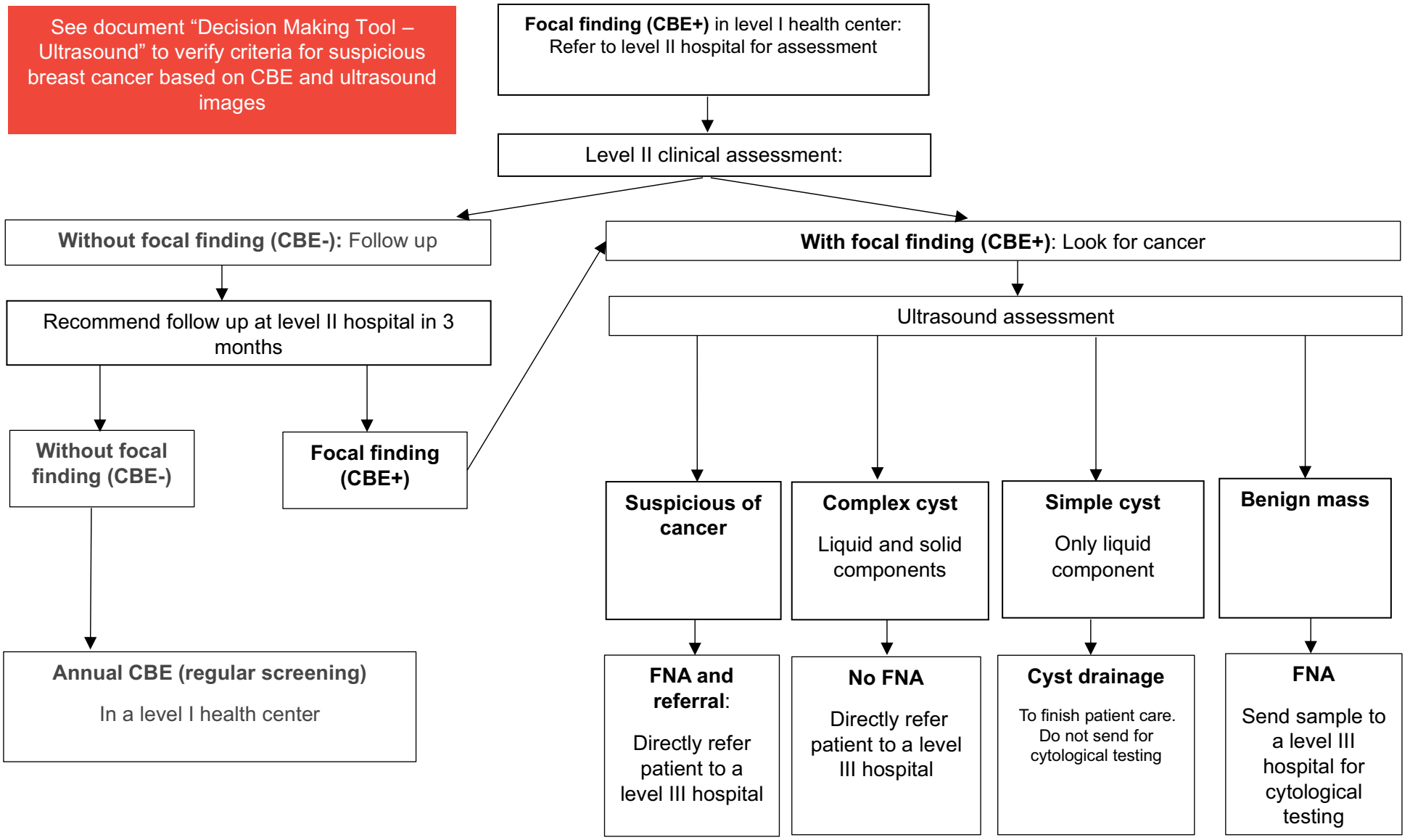
Women 40 years and older and those with a result, at a level I clinical assessment, stating suspicion of cancer will be sent to the health facility with a referral format approved by the Ministry of Health. The user will receive information about the detection procedures that will be performed. It is responsibility of the Health Direction/Regional Health Direction to establish which Hospital or Assistance Center will organize, program, and divide assistance to users referred from facilities of first level of assistance during at least one day a week. The date of the appointment should not exceed 15 days.

If the user has been referred and does not attend to the level II facility, the staff from the facility of origin will carry out a home visit, delivering the referral format which, depending on the case, which will specify the day of the week and office of the hospital or assistance center where the patient will be seen.

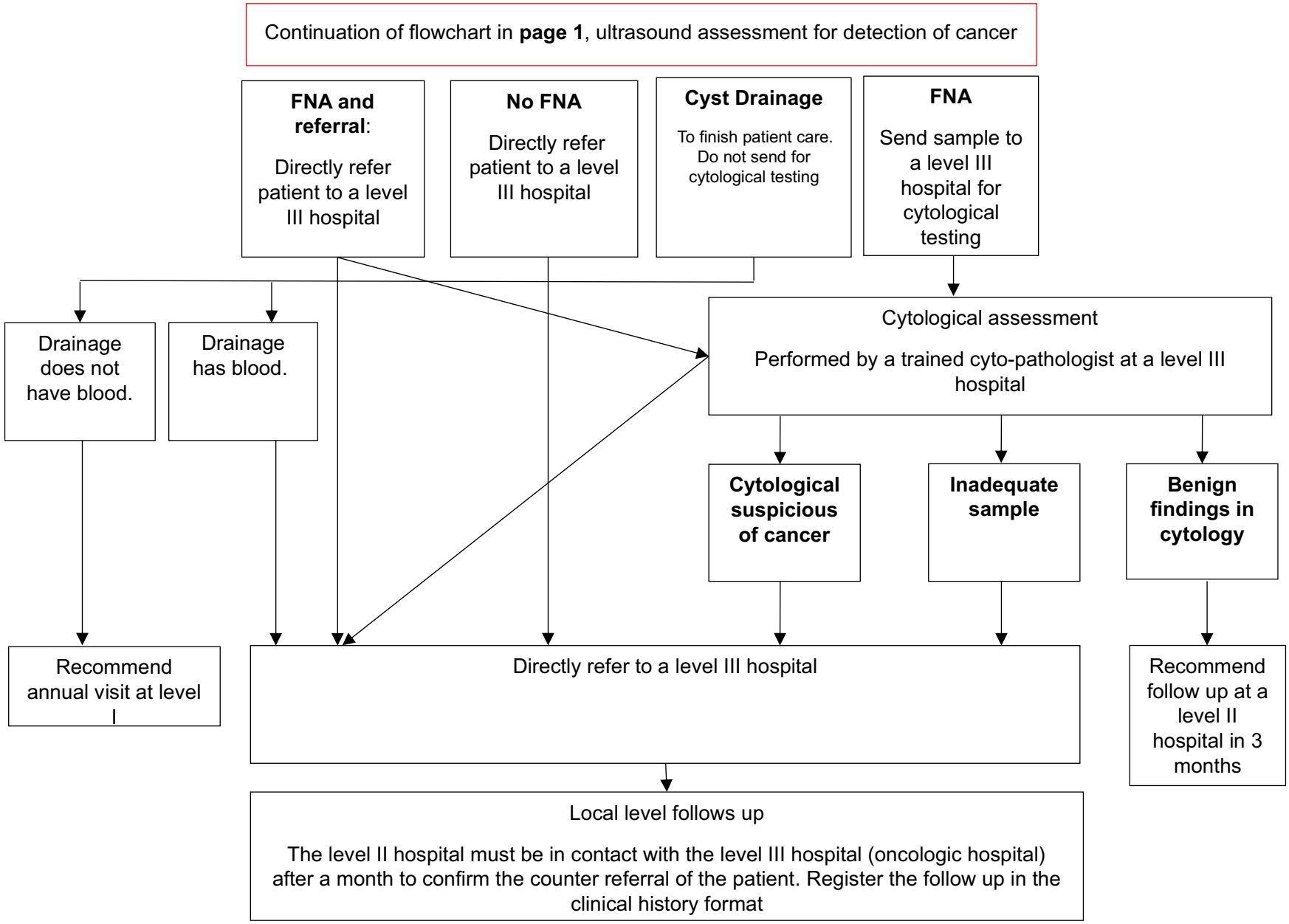
The facility of first level of assistance will report the number of users that are referred to the hopsital or assistance Center monthly.

Level II hospitals and centers are responsible, in the following 30 days of the counter referral of the users assessed through FNA, sending a presuntive diagnosis, procedures and follow up guidelines to be applied at the facility of origin. The result must be delivered to patients within 15 days of the visit and if positive, no later than 7 days. The referral center will report, within a brief period, the number of users that did not attend to the center in order to locate and notify them.

See document “Decision Making Tool – Ultrasound” to verify criteria for suspicious breast cancer based on CBE and ultrasound images



See **page 2** of flowchart – clinical question based on cytological findings


Continuation of flowchart in **page 1**, ultrasound assessment for detection of cancer
FNA and referral:
Directly refer patient to a level III hospital
No FNA
Directly refer patient to a level III hospital
Cyst Drainage
To finish patient care. Do not send for cytological testing
FNA
Send sample to a level III hospital for cytological testing
Drainage does not have blood.
Drainage has blood.
Cytological assessment
Performed by a trained cyto-pathologist at a level III hospital
Cytological suspicious of cancer
Inadequate sample
Benign findings in cytology
Recommend annual visit at level I
Directly refer to a level III hospital
Recommend follow up at a level II hospital in 3 months
Local level follows up
The level II hospital must be in contact with the level III hospital (oncologic hospital) after a month to confirm the counter referral of the patient. Register the follow up in the clinical history format

The level II hospital will refer users to Oncological Units of the hospital they belong to (IREN Norte), the level II health facility, in the case of cancer, to perform treatment through surgical procedures or other complementary procedures. Level III facilities, after the treatment, must counterrefer users with indications of control and follow up. Level II facilities, in coordination with the facilities of origin, oversee the follow up and control after the treatment.

(This text of unit 6 is an adaptation of the Oncological Technique Standard for Prevention, Detection and Early Diagnosis of Breast Cancer at a National Level. There have been adjustments made to the original text based on the flowchart developed by INEN for this new assistance model focused on places where the mammogram is not available.)

Unit 7: Information and registry system

Mensajes claves

- A well used health information system is fundamental for the success of the breast health assistance model in Peru.
- The information system favors the processes of control, allowing providers to carry out necessary follow up to women in reference to breast health.
- The suitable registry of information allows an adequate decisión making.
- The information system allows statistic reports to reflect the number of assistances held and knows where these have worked correctly and where they require reinforcement and improvement.

Information and registry system

The system must provide valid, reliable, and suitable information for decision making. There must be an adequate registry and optimal flow of information in a way that it allows the registry, follow up, monitoring, and impact of the intervention.

The information registered for the actions of detection and diagnosis of breast cancer and suitable referral are an informative support that favors the processes of control, follow up, and decision making.

Registry of Medical History in CBE

The medical history in prevention and control of breast cancer is a careful valuation of the woman that arrives for an appointment, with or without breast symptoms.

It is the process that organizes, systemizes, interprets, and proves the groups of data and procedures that are obtained during the medical visit.

The main reason for gathering age, menstruation history, breast, personal and family history, age of first pregnancy, habits, and other data is that it will help the health provider to establish the risk profile for breast cancer allowing the detection, diagnosis, follow up, and suitable referral of the patient.

If there were any specific symptoms, it is important to know when these began or when the woman perceived them. It is also important to know the characteristics of the symptoms, among other aspects.

The identification of personal and family (mother and sister) risk factors allow giving an adequate follow up for patients with a high risk in comparison to the general population. When there is family history, the likelihood of developing breast cancer increases significantly.

The trained health professional will develop a breast clinical exam and register the medical history in a detailed manner. In case the woman presents a palpable mass, he/she must note the characteristics of the

tumor, location based on the radio of the tumor, and distance form the nipple. It is importat to draw the location of the tumor in graphs, this will be used as guidance for the profesional that will perform the biopsy.

After the clinical breast exam, the professional will register the clinical impression in the format: “Normal”, “Abnormal Non-Tumor”, or “Tumoral or Suspicious of Cancer”. The fact of clinically establishing the suspicion of a breast tumor will be a reason for sending the patient to have a FNA performed immediately; the trained professional will register the characteristics of the aspiration of the node as well as the number of aspirations performed on the patient, and the number of slides used for smearing.

The trained professional will perform a breast ultrasound to identify the characteristics of the palpable node and know if it is a benign or suspicious mass; the trained professional will decide if the patient should have an FNA performed or not.

According to the results of the biopsy that will be delivered to the patient on a future appointment, which should not exceed 15 days after the procedure, the health professional will register the definitive diagnosis and ICD-10 code.

Register the name and last name of the patient in readable handwiting.

This states the great importance of the medical history as main document in the information system. It forms a complete registry of the assistance provided to the patient which must be complete, understandable, and follow an order.

ICD-10 Codes and registry of information in HIS format

An information system based on illnesses requires a specific classification with predefined keys to facilitate their identification, storage, aggregation, and other processes. This requirement is met with the availability of the International Code for Diseases (ICD) whose importance and utility has been shown.

The International Code for Diseases (ICD) consists in a system of codes that are appointed to specific diagnosis terms.

It has procedures, rules, and notes to appoint codes to diagnosis in registries and select those that will be processed to produce morbidity and mortality statistics.

The instructions for registeristration and classification of activities of the program for pervention and control of cancer are established by the Ministry of Health. Health professionals have been trained in the correct registry in the HIS format and using the correct ICD-10 codes.

The registry of data is done by following the instructions established in the manuals developed by the Ministry of Health.

The strategic program for prevention and control of cancer develops activites of health assistance oriented toward promotion, prevention, and early diagnosis of cancer.

In this unit, we give a summary of the codes of activities, procedures, and most frequent diagnosis in breast pathologies.

The trained professional that performs the clinical breast exam (CBE) must register based on the diagnosis found in the assessment and using ICD-10 codes.

When the clinical impression is normal, the assistance and assessment performed by the trained profesional will be registered according to what is established:

- **When the result of the CBE is “Normal”, the HIS format will be registered in the corresponding box:**
    - In item: Daignosis, reason for consultation and/or health activity, clearly note in 1st box: Breast Exam, and ICD: Z0143 code.
    - In item: Type of diagnosis mark ALWAYS "D"
    - In item Lab: note in 1st box registering N = When the result of the breast exam is normal.
    - In item Lab: note in 2nd box PV if it is the first time having a CBE.

When the clinical impression is “Abnormal non Tumor”, “Tumoral or Suspicious of Cancer”, patient will be referred for FNA (there is not any ICD-10 code for patients referred for a fine needle biopsy FNA) the assistance and assessment performed by the trained professional will register the HIS format following what is established by the Ministry of Health when a CBE is Abnormal:

- **When the result of the CBE is “Abnormal” and the patient will be referred to another facility, the HIS format will be registered in the corresponding box:**
    - In item: Daignosis, reason for consultation and/or health activity, clearly note in 1st box: Breast Exam, and ICD: Z0143 code.
    - In the 2nd box: Non Specific Mass and code N63x. In item: Type of diagnosis mark ALWAYS "D" in the first and second box.
    - In item Lab: note:

    In the 1st box registering A = When the result is abnormal.

    In the 2nd box reguistering DRV = Referral
- In the 3rd box register PV = If it is the first time having a CBE, leave in blank if it is not. There is not an ICD-10 code currently for patients referred to FNA, however you may consider the registries in LAB woth DRV because patients referred to an anual CBE will be evaluated by trained doctors where they have their FNA performed if necessary. There is an additional format for the registration of patients with an abnormal CBE. This format will register the data of the patient, facility or origin, date of abnormal FNA, clinical impression, whether the patient was referred or not to FNA, date of biopsy, date of delivery of result, FNA result, follow up date for the patient, follow up and observation note. With this format, we are able to perform a follow up to referred patiente and have a suitable registry made with the necessary information.

Follow up tool for Abnormal CBE and FNA

Institutional Logo

SEGUIMIENTO DE PACIENTES CON ECM ANORMAL Y BAF - RED DE SALUD TRUJILLO

MICRO RED:	VICTOR LARCO
EESS:	HOSPITAL VISTA ALEGRE

*HTDE=Herramienta Toma de Decisiones para Ecografia

N° ATENCIÓN	FECHA DE ECM ANORMAL	HCL	APELLIDOS Y NOMBRES	EDAD	DNI	TELEFONO	ESTABLECIMIENTO DE ORIGEN	DIRECCION	DIAGNOSTICO DEL ECM	Fecha HTDE	PLAN CLÍNICO DESPUES DE LA ECO	SE HIZO BAAF	NO SE HIZO BAF	FE DE

TRUJILLO ESTE 2017

FECHA DE BAAF	PROFESIONAL QUE REALIZA baaf	FECHA DE ENTREGA BAAF	RESULTADO DE BAFF	N° INFORME BAAF	FECHA DE VISITA	OBSERVACIÓN	SEGUIMIENTO DE PACIENTE- NOTA 1	SEGUIMIENTO DE PACIENTE - NOTA 2	SEGUIMIENTO DE PACIENTE - NOTA 3	SEGUIMIENTO DE PACIENTE - NOTA 4

Unit 8: Fine Needle Biopsy (BAF)

Mensajes claves

- FNA is a biopsy method that allows the collecting of cellular material of a mass to evaluate it under the microscope and determine what the mass is.
- FNA is a simple and reliable diagnosis method.
- FNA is a tool that benefits the access to breast health services for women.

Need of diagnosing breast cancer

A cytological or histological diagnosis that confirms cancer before a definitive treatment is considered a fundamental component in cancer therapy based on the Breast Health Global Innitiative (BHGI) that has set guidelines for the allocation of resources in breast cancer diagnosis (Yip et al. 2008). There are currently two options for sample taking of tissues that have a similar accuracy, when used correctly: a minimally invasive biopsy, also known as percutaneous or biopsy with needle and surgical biopsy. While the surgical biopsy has been the traditional standard, the sampling of the needle has shown to be more cost efficient (Fahy et al. 2001). The biopsy with a needle is less invasive and less expensive than a surgical biopsy, it does not cause scars and it can be done in an ambulatory clinic. The options of needle biopsies include fine needle aspiration biopsy, biopsy with a thick needle and vacuum assisted biopsy (Yip et al. 2008).

Advantages and disadvantages of FNA

The FNA method has many advantages. From the current biopsy options that exist today, the FNA is the simplest and least expensive method to evaluate palpable breast masses. It is also quick and minimally invasive. The morbidity rate is almost null, and it leads to a reduction of unnecessary surgeries for benign lesions (Zajdela et al. 1975, Rosa et al. 2012). In addition, it is less painful than the core biopsy which requires the use of an expensive and special needle and it has a higher risk of morbidity. The procedure is usually performed in a hospital facility while the FNA which is done in an ambulatory basis and does not take more than 1-2 minutes. Other advantages of the FNA include, the evaluation of post surgical massess to detect the recurrence of cancer and sampling of axillar nodes (such as the centinella nodes) to diagnose matastasis and stages of breast cancer. The FNA performed by doctors at a district hospital level reduces the burden on women because they will no longer need to travel to the regional hospital for their diagnosis.

However, this tool has limitations. With FNA, you are not able to assess the “grade” of the tumor; this will be evaluated in the surgical piece. In addition, the FNA is not able to differentiate between an on site or invasive cancer; however, both lesions need to be removed and this is evaluated in the surgical piece. Finally, FNA is not able to diagnose on the same terms that histology does in some benign lesions; however, these lesions usually do not need to be removed due to their benign nature.

It is important to reinforce that in these cases, the FNA has met its mission which is the determination of a benign or malignant nature and state the next stepa for follow-up, whether it is surgery or clinical follow up.

At a public health level, the greatest disadvantage of the FNA is the inconvenience of requiring the interpretation of cytology by specialized pathologists.

History of FNA

The FNA is a well refined technique with a long history of use in clinical contexts. The technique was described in the United States more than 80 years ago by Martin and Ellis (1930). It was later developed in Switzerland with Franzen and Zajicek in the Karolinska Institute during the 1960s and 1970s. During the last few decades, the preparation and interpretation of material has been refined. It has acceptance for clinical use due to its low cost, being ambulatory, quick, and having high diagnosis accuracy.

Purpose of FNA

The FNA is a way of diagnosing palpable masses that have been found in the body of a human being. It is a quick, reliable, and comfortable method to diagnose breast masses identifed by the woman or the health staff. It is simple and requires a 10 to 15-minute appointment.

When a mass is detected it is important to understand the nature of the mass to determine the suitable management of the patient and whether a surgery is required. The FNA is used to obtain small quantities of the mass tissue. If the surgery is necessary, a doctor may perform this complex process with a diagnosis on hand and he may inform the patient about her treatment options. In addition, the use of an FNA may avoid surgeries and unnecessary services reducing costs for the patient and health system. Knowing the type of mass will also reduce the anxiety of the patient.

Instructions for FNA

The FNA is indicated for the evaluation of palpable breast lesions. In the case of a mass detected by a mammogram and/or ultrasound, but not palpable, the FNA can be done with an ultrasound guide.

The FNA is contraindicated for the evaluation of microcalcifications without a palpable or visible mass. In these cases, the adequate procedures are excisional or stereotactic core biopsy.

Steps of FNA

FNA gives a quick, exact, and almost not painful diagnosis in the majority of masses. In simple terms, FNA consists in the following steps:

1. Use a needle and syringe to extract material from a mass.
2. Smear the material on a slide.
3. Fixate and color with a conventional dye (hematoxylin).
4. Observation on a microscope (done by a pathologist).

The FNA is done after a mass has been detected in the breast (throught the clinical breast exam).

First, the provider that will perform the FNA asks the patient about the mass. When did you feel it? Does it hurt? Has it changed? Have you had a lesion, infection, or medical treatment in this area? Review the medical history and other reports of the health provider.

The mass is later reviewed by guidelines of the clinical breast exam. Evaluation held in the specific localization, size, and consistency.

The FNA is brief and lasts only a few seconds. The sensation is like an insect bite or vaccine. A very thin needle is used. The skin is cleaned with alcohol, the needle is inserted, and a sample is taken. After the procedure, the patient is asked to apply presuure with gauze during some minutes. Most masses need two to four punctures to extract a quality sample.

After the FNA, the patient may return to her normal activities. It is possible for her to experience inflammation or some pain in the site of the puncture. Any discomfort can be avoided with a well done FNA, including pressure to the location after the puncture. It is important to inform women about this possibility and prescribe a pain killer. If possible, avoid taking ibuprofen.

Diagnosis of FNA

FNA has five diagnosis categories:

1. Benign (it includes cysts, fibrocystic changes, fibroadenoma, ductal ectasia, fat necrosis and lactational adenoma).
2. Atypical/undetermined (for example, a low-grade neoplasm cannot be discarded).
3. Suspicious/probably malignant.
4. Malignant.
5. Unsatisfactory.

Diagnosis sensitivity, specificity and acurracy is variable and it depends on the quality of the sample as well as the skill and experience of the provider that performs the FNA to obtain an adequate and representative sample of the lesion. In experienced hands, the sensitivity is above 90% with few negative results, the specificity is almost 100% with estremely rare cases of false positives and a diagnosis accuracy of 94% (Rosa et al. 2012).

Steps after a positive FNA result

Once the cancer diagnosis is established by a FNA, the patient is referred to IREN Norte, with a referral, to complete the evaluation usually through surgery in order to obtain material and carry out tumor markers (ER, PR, Her2/neu) that are important to determine the therapy to follow (where available). Overall, the oncologist and radiotherapist decide with route to take, this may include radiotherapy, chemotherapy, and hormonal therapy.

Answers to frequent questions related to FNA

As with any surgery or biopsy, a patient will have some questions regarding the process and what to expect. Here you may find the answers to questions commonly asked:

What are the complications of the FNA?

The technique is usually free of complications because the needle is thin. A small bruise or slight pain may occur in the place of the puncture. There can also be a little inflammation. This is slight and it does not require treatment, it should disappear in a couple of days. If there is any bleeding, it is limited to some drops and is very rare. Complications such as a slight swelling or infection are extraordinarily rare. However, if there are any problems after the biopsy, the patient must notify her doctor immediately.

How are the FNA results obtained?

The doctor that performs the FNA will send the sample to Cytology service of IREN-Norte. There will be a professional responsible of picking up the result in order to enclose it in the medical historyof the patient; in the facility where the FNA was performed, the doctor (that performed the FNA) will be the one to inform the patient of the result in the next appointment.

When will the results be known?

The results will be ready in approximately a week. The doctor (the one that performed the FNA) should be the person to explain the results and the steps to follow to the patient o the patient (if necessary).

What are the limitations of FNA?

In most cases, FNA determines the cause of the mass. In few cases, the result of cytology of the sample reduces the possibilities to two or three, and if that is the case, there will be more proof needed. In rare ocassions, the simple may not be sufficient. In these cases, the doctor may repeat the FNA or perform other studies. No medical test is 100% accurate. The possibility of having a false negative is from 2 to 5%. Therefore, nor the patient or her doctor must ignore a mass after a negative result. The women must monitor the mass to see if there are any changes. If it grows, there must be a new sample taken, a FNA or surgical biopsy.

Unit 9: Treatments for Breast Cancer

Mensajes claves

- The mastectomy was previously the most common treatment for breast cancer. There are now other treatments that may preserve the breast.
- Treatments are less invasive when breast cancer is found in earlier stages.

Treatment

The text for this unit has been obtained from the NCI National Cancer Institute website. It is a well-developed source and it describes the forms and methods for cancer treatment in detail.

There are different treatments available for breast cancer patients. Some treatments are standard (the treatment currently used) and others are under evaluation in clinical tests. These tests look to improve current treatments or obtain information about new treatments for cancer patients. When clinical tests show a new treatment that is better than the standard one, the new treatment may become a standard treatment. Patients must think about participating in a clinical test. Some clinical tests are open only for patients that have not started a treatment.

Six types of standard treatments are being used:

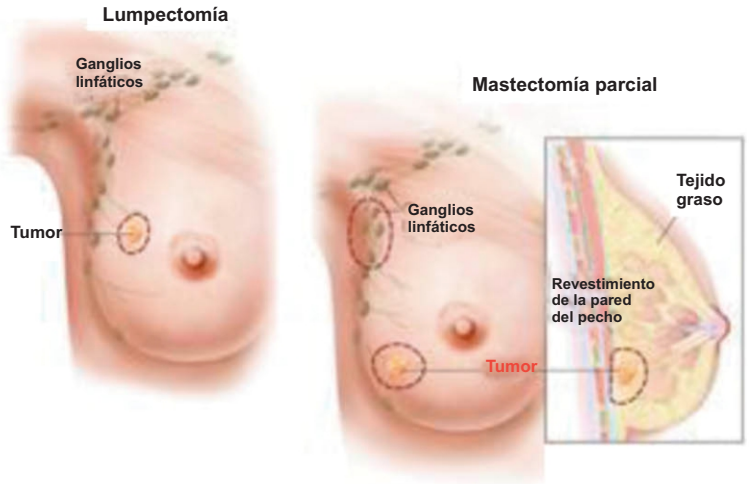
Surgery

Many breast cancer patients go under surgery in order to remove breast cancer. Normally some lymph nodes are removed from under the arm and observed under a microscope to verify if they contain cancerous cells.

Surgery to preserve the breast: an operation to remove cancer but not the breast. It includes the following procedures:

- **Lumpectomy:** surgery to remove the tumor (mass) and a small quantity of normal tissue around it.
- **Partial mastectomy:** surgery to remove a part of the breast that has cancer and some normal tissue surrounding it. The protecting layers over pectoral muscles under the cancer can also be removed. This procedure is also called segmentary mastectomy.

Cirugía para conservar la mama

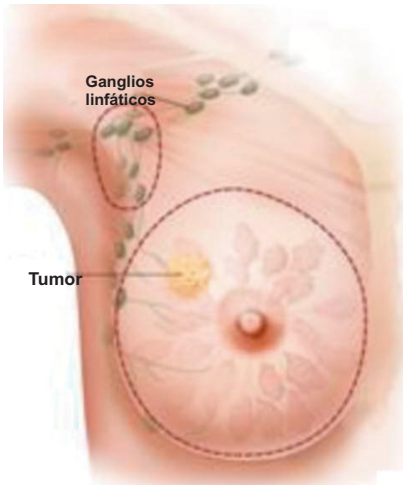


Patients being treated with surgery to preserve the breast can also have some lymph nodes removed from under the arm to perform a biopsy. This procedure is called lymph node disection and it can be done at the same time than the surgery to preserve the breast or later. The dissection of lymph nodes is done through a separated incision.

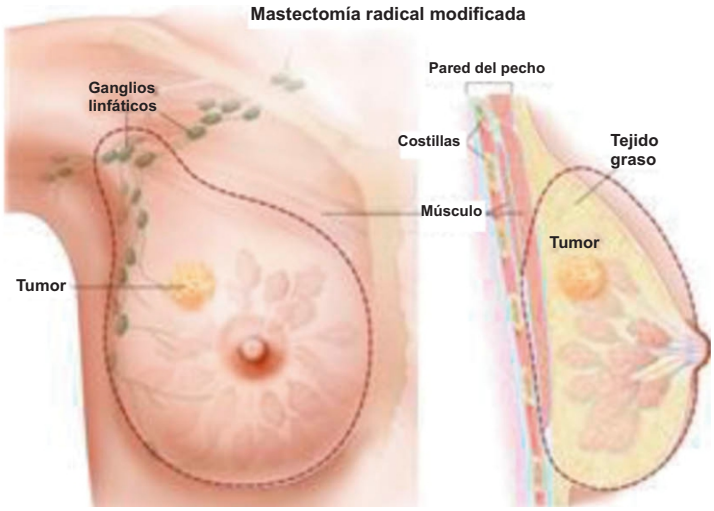
Other types of surgery include the following procedures:

- Total mastectomy: surgery that removes the breast that contains cancer. This procedure is also called simple mastectomy. Some of the lymph nodes can be removed from under the arm to perform a biopsy at the same momento of the surgery or after it. This is done through a separate insection.

Mastectomía total (simple)



- Modified radical mastectomy: surgery to remove the breast that contains cancer, many of the lymph nodes under the arm, protecting layers of pectoral muscles and, sometimes, part of the muscles of the breastwall.



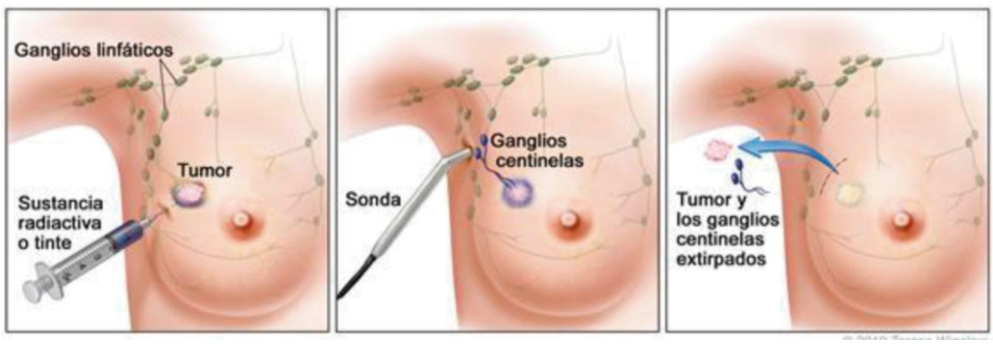
Chemotherapy can be administrated before the surgery to remove the tumor. When chemotherapy is administrated before the surgery, it may reduce the size of the tumor and quantity of tissue that needs to be removed during surgery. Treatment administrated before surgery is called neoadjuvant therapy.

Even if the doctor removes all the cancer in the surgery, some patients may receive radiotherapy, chemotherapy, or therapy with hormones after the surgery in order to destroy any cancerous cells that may have been left. The treatment administrated after the surgery to reduce the risk of cancer returning is called adjuvant therapy.

If the patient is going to have a mastectomy, breast reconstruction can be considered (surgery or reconstruct in shape of a breast after a mastectomy). A breast reconstruction can be done during the mastectomy or after. The reconstruction can be done with tissue of the patient (not the breast) or through implants filled with saline silicone or silicone gel.

Biopsy of a centinella lymph node followed by surgery

The biopsy of a centinella lymph node is a procedure to extract the centinella lymp node during a surgery. The centinella lymph node is the first node that received lymph drainage of a tumor. It is the first lymph node where it is possible for cancer to spread from the tumor. A radioactive substance or blue dye is injected close to the tumor; it flows from the lymph ducts to the lymph nodes. The first node that receives the substance or dye is extracted. A pathologist observes the tissue under a microscope to verify if there are any cancerous cells. When cancerous cells are not detected, it may not be necessary to extract more lymph nodes. After the biopsy, the surgeon removes the tumor (surgery to preserve the breast or mastectomy).



Lymph nodes Radioactive substance or dye Tumor	Centinella nodes Catheter	Tumor and centinella nodes removed

Biopsy of centinella lymph node in the breast. A radioactive substance or blue dye is injected close to the tumor (first panel). The material injected is identified with the eyes or a catheter that detects radioactivity (middle panel). Centinella nodes are extracted (the first nodes that absorb the substance) to determine if there are any cancerous cells present (last panel).

Radiotherapy

Radiotherapy is a treatment that uses high energy radiation or other types of radiation to destroy cancerous cells or avoid them from growing. There are two types of radiotherapy. External radiotherapy uses a machine that sends radiation to the area in which the cancer is found from outside of the body. Internal radiotherapy uses a radioactive substance sealed in needles, seeds, cables, or catheters placed directly inside the cancer or close to it. The way in which radiotherapy is administrated depends on the type and stage of cancer that is being treated.

Chemotherapy

Chemotherapy is a cancer treatment that uses medication to interrupt the growth of cancerous cells by destroying them or avoiding their multiplication. When chemotherapy is administrated by mouth or injected in a vein or muscle, the medication enters the blood stream and affects cancerous cells of the whole body (systematic chemotherapy). When placed directly on the spinal fluid, an organ or body cavity such as the abdomen, medication mainly affects cancerous cells of these areas (regional chemotherapy). The form in which the chemotherapy is administrated will depend on the type and stage of breast cancer being treated.

Therapy with hormones

It is a treatment that blocks the production of estrogen or its action and avoids the growth of cancerous cells. Estrogens and substances elaborated in the ovary (90%) and adrenal (10%) that circulate by the blood stream. Some hormones such as estrogen stimulate the growth of certain cancers. If the tests show that cancerous cells offer sites where the hormones (receptors) may adhere to; medication, surgery or radiotherapy is used to reduce the production of hormones and or avoid them from working. The treatment to avoid ovaries from developing estrogen is called ovarian ablation.

Hormonal therapy with tamoxifen is frequently used on patients in early cancer stages and patients with metastatic breast cancer. This may act on the cells of the whole body and increase the possibility of having endometrial cancer. Women that take tamoxifen must have a pelvic exam performed every year to verify if there are signs of cancer. Any vaginal bleeding that is not a menstruation cycle must be notified to a doctor as son as possible.

Hormonal therapy with aromatase inhibitors is administrated in some post menopausal women that have a hormonal dependent breast cancer. Aromatase inhibitors reduce the estrogen in the body because it does not allow enzyme named aromatase convert androgen into estrogen.

Certain aromatase inhibitors may be used for treatment in early breast cancer as therapy or after two or three more years of tamoxifen. Aromatase inhibitors are being clinically tested to compare them with hormonal therapy woth tamoxifen in the treatment of metastasic breast cancer.

Directed therapy

Directed therapy is a type of treatment in which medications or other substances are used to identify and attack specific cancerous cells without damaging normal cells. Monoclone antibodies and tyrosine inhibitors are two types of directed therapy that are used for breast cancer treatment.

Therapy with monoclone antibodies is a treatment for cancer in which antibodies produces in the lab are used starting from a unique type of cells of the immune system. These antibodies may identify substances in cancerous cells or normal substances in the body that contribute to the growth of cancerous cells. Antibodies adhere to the substances and eliminate cancerous cells, avoid their growth, or prevent them from spreading. Monoclone antibodies are administrated by infusion. These may be used alone or to adminístrate medication, toxins or radiactive material directly towards cancerous cells. These antibodies can be used in combination with chemotherapy as supporting therapy.

Trastuzumab (Herceptyn) is a monoclone antibody that blocks the effects of the HER2 growth factor protein that sends signals to breast cancer cells. Around 25% of breast cancer patients have tumors that can be treated with trastuzumab combined with chemotherapy.

Tyrosine inhibitors are medication used in directed therapy to block signals that tumors need to grow. These may be used in combination with other anticancerous medication as supporting therapy.

Lapatinib is an inhibitor that blocks the effects of the HER2 protein and other proteins of the interior of tumor cells. It may be used to treat patients that have HER2 positive breast cancer that has evolved after the treatment with trastuzumab.

PARP inhibitors are a type of substance used in the directed therapy to block the repair of DNA and they may destroy cancerous cells. The therapy with a PARP inhibitor is in a study for treatment of triple negative breast cancer. (National Cancer Institute: http://www.cancer.gov/espanol/pdq/tratamiento/seno/Patient/page5)

Unidad 10: Consejería – Examen Clínico de Mamas

Mensajes claves

- Counselling is an interpersonal analysis and communication process.
- Counselling is an important base to create a relationship of trust with a patient; this can have influence in her decision of seeking medical assistance in the future.
- Counselling is directed not only to provide information to the patient but also to uinderstand their emotions regarding the assistance provided and the meaning of the exam for her.

Counselling concept

Counselling in early breast cancer detection is considered a process of interpersonal analysis and communication between the health service provider and the user; this allows providing elements that support a voluntary, conscious and informed decisión about detection, diagnosis and treatment actions for breast cancer.

As a process it supports the user population in the identification and management of emotions, fears, and myths related with a health problem. By knowing the needs of the user through interpersonal communication, the health profesional will prioritize the relevant aspects to treat, avoid and overload the user with more information than what was required. The user's needs become a strategic guide to provide information and counselling.

Counselling objectives

In relation to the clinical breast exam, the counselling objectives are:

1. Ensuring the the patients voluntary decision to have a clinical breast exploration, guaranteeing that she has received information about the procedure to be performed by the health staff.
2. Supporting the reduction of distress and fear. It is necessary to know her feelings and concerns to be able to support her with information that clarifies her doubts and ensures she will continue with the following level of assistance.
3. Guiding the woman in a clear and objective manner regarding the procedure that will be performed, correcting erroneous ideas about the clinical exploration, leading to the reduction of the likelihood of developing illnesses and how fundamental it is to adopt favorable behaviors and healthy lifestyles that will allow her to reduce the risk factors.
4. Analyzing the reasons for which the woman should retrun on an annual basis to have a clinical breast exam, inform and analyze the risk factors and raise awareness regarding health being as important as any family member.
5. Verifying that the user has received and understood the information provided. It must be considered that the decision and consent of the user must de respected based on the principles of respect, wilfulness and impartiality of the guidance and counselling.

Counselling moments

Counselling objectives may be performed in three moments when providing health assistance related to the clinical breast exam. These three counselling moments are: before, during, and after performing the clinical breast exam.

Before the clinical breast exam:

The patient will be requested to provide her consent before performing a clinical breast exam.

She will be given a brief guidance regarding the technique, mentioning that the health professional is trained to perform this exam.

The experience of being in a health facility and/or receiving medical assistance may produce distress in a person. To promote goals of secondary prevention, we must make sure the patient feels comfortable with the assistance she receives and that it will exist for her in the future. Before performing a clinical breast exam, we must consider the emotions of the patient and ask her for her concerns. The use of some simple steps before a clinical breast exam may help the counsellor to meet objectives #1-3 (assurance of a voluntary decision, reduction of distress and fear, guidance to the woman).

These steps are:

1. Greet the patient with respect and kindness.
2. Perform a brief guidance regarding breast cancer screening.
3. Ask for the patient´s consent to perform a clinical breast exam.
4. Assess the woman´s knowledge regarding a clinicial breast exam.
5. Answer the patient´s concerns regarding a clinical breast exam.
6. Describe the procedure before performing it and describe the possibilities of clinical findings (normal, abnormal).

During the clinical breast exam:

During the clinical breast exam, we must make sure the patient is comfortable and knows what is happening. The patient may feel anxiety during the procedure, and she may think it is a breast cancer exam.

Therefore, during the clinical exam, the health provider must guide and explain what is being done to the patient in a simple and clear manner. This is an opportunity to reinforce the idea that the clinical breast exam is a simple and accurate exam when done by a trained health professional.

The provider must also explain the importance of the self exam and how the patient can be alert to specific signs and symptoms of breast illnesses.

The patient also received information and counselling while the clinical breast exam is being performed.

It is important to do this in a simple and clear manner and repeat this in a wider range in the third moment of counselling. During the clinical breast exam, objectives #2 and 3 (reduction of distress and fear, guide the woman) can be met by using the following steps:

1. Provide clear explanations to the patient.
2. Explain what is being done in every step of the clinical exam.
3. Speak about the self exam to know what is normal or abnormal for her own breasts.

After the clinical breast exam:

Women must receive guidance and counselling based on their results with the prupose of facilitating decision making of actions to follow for every case.

If the result is normal, we must create awareness in the patient regarding the iomportance and need of having a breast exam performed by a health profesional once a year, or before, if any changes, signs or symptoms are detected in her breasts. We must analyze with the woman the reasons for which she must return on an annual basis, or before, if any changes are seen in the breasts (using information covered in units 1, 2 and 5).

It is important to report and explain the modificable risk factors to improve the patient´s health, establishing an application of healthy habits, living, and eating in a healthy manner.

If the result of the clinical exam is abnormal non tumor, tumor or suspicious of cancer, it is important to explain to the patient the meaning of the results based on an assessment. It is also important to inform and provide the instructions for an adequate management, based on the actions to follow as well as other exams that will be performed.

Under the new model for breast health assistance, the adequate management is to provide the woman with a referral to receive a fine needle biopsy. We must explain what a fine needle biopsy is and what we can expect from the process to the patient (using the information from unit 8).

The provider must make sure that any woman that has had a CBE performed understands the results and must answer any question the patient may have.

Objectives #4 and 5 (analyzing the reasons for having a CBE, verifying the patient has received and understood the necessary information) have been met with the counselling provided after the clinical breast exam.

For some women, knowing that the biopsy will give them a diagnosis, which is the determination of a benign or malignant nature or the tumor, is a process of distress and fear for the results and intructions or steps to follow after the diagnosis, being this a surgical approach, or clinical follow up. The patient will receive guidance regarding psychological support, professional accompaniment in this situation of distress which may be experienced with this result.

Performing the following steps may support the health provider in acheiving these goals:

1. Giving guidance after the CBE based on the results: normal clinical exam, abnormal non tumoral and tumoral or cancer suspicious.
2. Discussing the topic of self recognition.
3. Analyzing the reasons for performing a CBE.
4. Ensuring that the patient understands the results.
5. Ensuring that the patient has the opportunity of asking any question.

Attitude of the counselor

It is important to consider that the attitude of the health staff is crucial. A positive attitude facilitates communication and work; we need to consider that counselling is a bidimensional communication that is established with the prupose of supporting the user to make decisions regarding health and it is a support to manage feelings related to these decisions.

The counsellor must look for the user to feel and analyze that the clinical breast exam is important for her health. By assessing the needs and considering the options, allowing them to think about things and value them, they will obtain more trust. However, people´s emotions must not be manipulated; this is only counselling not psychotherapy. Finally, counsellors are trained for this purpose; this training does not form them as professionals, they only integrate knowledge to contribute to the counselling process.

Important messages for women and the community

Then, what should women do after counselling?

This section includes the most important messages and information all women should consider:

- Women must know what is normal for their breasts and that there are specific signs and symptoms for breast illness that they should be aware of for them to detect any suspicious change such as:
    1. Swelling, darkening or redness of the breast.
    2. Change in size/shape of the breast.
    3. Dimples or wrinkles in the skin.
    4. Itchiness, ulcers or scaly sore or rash in the nipple.
    5. Sinking of the nipple or other parts of the breast.
    6. Sudden secretion of the nipple.
    7. Recent and persistent pain in a part of the breast.
    8. Appearance of a mass, hard ball, or a thicker skin within the breast.
- The age with a higher risk of having cancer is between the ages of 40 and 65, therefore they must have a clinical breast exam performed once a year even if there are not any symptoms, discomforts or changes in the breasts.
- All women older than 40 years old must have a clinical breast exam performed every year; this must be done by a trained health professional.
- What must a woman do if she observes any abnormal change in her breast? She must go the specialist immediately and not be embarrassed; this decision may save her life.

If the patient has questions about the self exam and whether it is efficient, she will be explained that there are studies that assessed and demonstrated that the breast self exam does not reduce cancer mortality, increasing the number of unecessary biopsies in a significant manner.

The US Preventive Services Task Force recommended that the health staff does no teach women to perform a self exam. The fact that a clinical breast exam must be performed by a trained health profesional must be emphasized and prioritized; this exam detects smaller lesions than a self exam.

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