

Breast Ultrasound

by ACADEMIADELIVERY

Submission date: 25-Apr-2020 08:32AM (UTC-0500)

Submission ID: 1307468397

File name: Breast_Ultrasound.docx (17.62K)

Word count: 2359

Character count: 11530

Name

Institution

Date

Breast Ultrasound

Introduction

The health of a human being is very vital since it determines how efficient an individual will be. Women have, in the recent past, been facing many challenges, especially with their health. What most of them have never understood is that their bodies are, to a very great extent, very delicate as far as health is concerned. Taking care of one's body is an individual's responsibility, which must be adhered to and followed up with the strictness it deserves.

Most people in many parts of the world have never understood the need to have frequent checkups to ascertain the health factors of their lives. Research in the recent past has shown that most people around the world are suffering from one disease or another, but they are entirely unaware of the same. Many parts of the body of women specifically require close supervision and attention to make sure that it doesn't suffer any complication.

In the past few years, the health sector has seen tremendous improvement in terms of medical equipments, aimed at making life more enjoyable. The breasts of women since they carry milk, which is rich in proteins, suffer a high risk of contracting infections that are dangerous to their health.

Medical practitioners and researchers in the early 1950s came up with automated machines that could detect the presence of any abnormalities in the breasts (Dasgupta et al., 2016). These Ultrasound machines boosted the healthcare sector by helping doctors to predict early infections in the breasts of women who have high chances of getting infections.

The improvement in technology has, in the past years, reduced the many risks of infections that most women have been suffering for very many years. The machines are created in such a way

that they have the capability of using sound waves that forms internal pictures of the breast.

These pictures are then studied by clinical officers and radiologist to establish an abnormality which may come out of the same.

The good thing with this type of breast examination is that it poses no danger to the breast since it doesn't use any radiation, which can bring complications to the patient. Physical examination of the breasts is the first step that can help individuals determine whether they have an abnormality in their breasts or not. This examination is vital since it can help someone to seek medical attention as early as possible to avoid escalation in the issue.

Ultrasound scanning procedures have various uses that are commonly known. There is a reasonable way on which any breast should be functioning, and any deviation from that will predict a looming danger. Cases of lumps felt in the breast should be handled with immediate effect since it is the best channel of contracting cancer of the breast, which is very dangerous to any woman who plans to have children and peaceful life.

Anatomy

Human beings have many organs which combine to form the whole structure of a person. This research will be looking specifically at the anatomy of the breast of human beings concerning many dangerous diseases associated with the same. Having a look at the breast of a person is made up of tissues that are overlying on the chest (Kalimuthu, Yegiyants, & Brenzek, 2015). The breasts of women, for instance, are made up of tissues which are specialized in the production of milk for babies.

The tissues found in these breasts form complicated chains of lobes, which play a significant role in milk production. From the outside, there is the nipple, which is the exit path through which milk flows out of the breast. The nipple is connected backward to large ducts, which eventually

branches into more delicate ducts inside of the breast. These ducts are connected to the blood vessels which supply nutrients and materials required in the process of milk production.

Nerves from different parts of the body and those originating from the central nervous system are connected to the breast as well, thereby bringing sensation to the whole organ. For the breast to have its standard and required shape, there are several connective tissues as well as ligaments that play a significant role in making the organ look the way it is.

The primary function of the breast is the production of the milk for feeding newly born babies. Several conditions are associated with the breast and therefore require close and meaningful supervision to avoid damage to the tissues as well as the smaller fragments of the whole organ. Since the breast has several duct cells, these cells face a high risk of conducting what doctors term ductal carcinoma in situ (Narod et al. 2015).

This kind of cancer is capable of damaging the duct cells, therefore, bringing abnormality to the breast and inhibiting the production of the milk in the process. The good thing with this type of breast cancer is that curing it is possible as long as its spread is not deeply spread in the body.

Lobule cells of the breast are the core producer of the milk in women. As much as they are in a position to trigger massive production of milk, they are at high risk of being attacked by several infections, which can render it functionless.

Lobular carcinoma in situ is a type of cancer that mainly invades active milk-producing lobule cells, although they don't have the capacity to spread widely in the body of the victim.

Multiplication of cells in the shape of a human being is standard, but if the number increases in a manner that is out of proportion, then it can be disastrous to the body.

Atypical hyperplasia of the breast, according to doctors, is a situation where cells are seen to be multiplying in an abnormal manner either in the breast ducts or the lobules. This can cover the

whole body, although research has shown that it is not very harmful and, therefore, not cancerous. One unique thing with this type of infection is that it exposes women with the same to the risk of contracting cancer in the future as compared to those who don't have it.

Breasts are supplied with fats that are essential in their normal functioning. The supplied fats can lead to fat necrosis, which develops from an injury incurred in the sections of the breast organ as a lump (Kerridge et al. 2015). Nursing mothers have breasts which are actively producing milk and on large quantity. The fluid being produced posed a significant danger on women since they are likely to contract mastitis, which in simple terms is the enlarging or abnormal increase in the size of the breast.

Male breasts are not supposed to overgrow since they don't have kids to breastfeed, but when the latter occurs, then there is likelihood gynecomastia is actively taking place (Lapid, Jolink, & Meijer, 2015). Calcium, which is an essential mineral in the body of a human being plays a very crucial role in the development of body organs of human beings. Whenever there is a deposition of calcium on the breasts of women, it is an indicator of the presence of mammograms, which suggests a likelihood of cancer happening in the future.

Women who are in their 40s have a likelihood of suffering from a disorder known as phyllodes tumor, which results from actively and fast-growing breast tumors, which in most cases, is rare. The breasts of women are created with the primary function of producing milk to feed young ones as well as give the desired shape to the people. These organs are supposed to be scrutinized not only when they are producing milk, but even in their tender stage to prevent any abnormality that may arise.

Technique

Breast ultrasound is an enormous process that requires vast technical equipment as well as know-how. These equipment require specific procedures to be followed strictly and to the latter to get the best results that are needed for an examination. Having the types of equipment and machines is one thing, and knowing how to utilize them is a totally different issue that requires vast knowledge in handling.

The three essential things which must be present for the process to take place successfully are the ultrasound machine, the technician to handle them, and the breast of the patient for testing. There must be careful selection of the pieces of equipment to ensure an effective and harm-free process, which will give effective results. The frequency of the instrument selected is entirely determined by the extent and seriousness of the infection, as well as the part of the breast to be tested (Roy et al. 2016, April).

The wrong choice of the machine is likely to give results that may, to some extent, be not correct as per the test being carried out at one given time. For instance, when one is carrying out a check on the breast with either large attenuative, inflammatory masses, or the axilla, a transducer machine with a frequency which is lower will be required. When carrying out either skin lesions or nipple tests, there will need to have what is called a standoff to aid in the whole process.

Patient position is very vital as far as the breast ultrasound scanning process is concerned. The breast of the patient being test must be placed in such a way that it is evenly distributed, which will ease the process of scanning and bring out the required results. The arm of the patient may bring a hindering factor; therefore, it is supposed to be raised over the head so as to expose the breast fully for the examination process to be active and the results to be correct.

When the lump is easily discoverable by the patient, it is imperative just to ensure that there is a correlation with the ultrasound to enable examination when erect. There are various testing and

scanning techniques that can be applied in the process of performing an ultrasound on a patient with breast problems. Some of these techniques are easily achievable since they are not complicated, but some require inner expertise so as to handle them.

The most common technique where a hard copy of the imaging is required, there must be an initial scan where a ¹ grid scanning pattern is used, followed by a clock face or radial technique (Guo et al. 2015). For the grid scanning pattern, the person carrying out the scan must ensure that it is run up and down the affected breast in rows for overlooking breast tissue. The scanning should start from the upper and outer quarters and run in a transverse manner, sliding the inferior carefully from the top part to the bottom. The process must be repeated by moving the machine across and repeatedly making sure there is a sweep from the junior section to the superior one. However, going through the process several times across the whole breast will provide significant and desirable results from which a solid conclusion on the situation can be drawn. At this point, it is essential to perform a rotation aimed at the sagittal plane, and the whole process repeated over and over.

The repetition of these processes is to ensure that there is a proper application of the grid pattern from one quadrant to another in large or mobile breasts. When it comes to the radial scanning pattern, also known as clock pattern, a totally different format is applied to the affected breast (Jiang et al. 2016). The process assumes a clock-like model where the process is started at 12 o'clock, and the machine moved in a clockwise direction, making sure that the ² toe of the probe is always at the nipple.

¹ The scanning must be done by rotating the probe around the nipple several in order to get desirable results. If the breast is more significant, for instance, it will be essential to perform a

second pass, which should be further away from the nipple in order to cover the entire breast during the rotation process.

Conclusion

Ultrasound has, in the recent past, been an essential tool in determining the health of breasts all over the world. Discovering any given issue as far as breasts are concerned has played an indispensable role in the early treatment of diseases, which usually invades this vital and sensitive organ of the human being. Diagnostic tools have, to a great extent, enabled the doctors to treat various ailments, thereby keeping most of the cancerous tissues away from the breasts. Some of the indicators discovered before posing a dangerous encounter on the breasts are as follows. Investigations concerning a palpable lump are realized by the use of the ultrasound scans. Secondly, mammography abnormality is a dangerous medical condition that must be addressed with the seriousness it deserves, or else it can bring massive damage to any human being (Suhail, Sarwar, & Murtaza, 2015).

With the invention in the ultrasound scanning tools, the issue of mammography abnormality has been dealt with at an early stage, thereby preventing all the problems concerned with the same. Prevention of nipple discharge has been necessitated by early and timely diagnosis through ultrasound, therefore, keeping the looming danger at bay. Most of the infectious diseases require close supervision and follow up. For instance, the known lesion is easy to follow it up so as to bring healing, which can be achieved through a vigorous scan.

Mastitis and well-organized guidance for biopsy have received outstanding achievement in the recent past with the help of the machines, which can detect them in their early stages.

Contrariwise, there are few shortcomings as far as this method is concerned. In cases where there

are huge breasts that are mobile in nature will pose a significant challenge in carrying out an active and result-giving scan.

More so, in cases where we have any post-injury to the breast or surgery done on the breast will lead to poor results as well as obscuring pathology (Stouten-Kemperman et al. 2015). Most issues related to breasts have been handled in their early stages as a result of inventions and improvements in healthcare, thereby making life more peaceful.

Breast Ultrasound

ORIGINALITY REPORT

1%	0%	0%	1%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Curtin University of Technology Student Paper	1%
2	Submitted to RMIT University Student Paper	<1%

Exclude quotes	Off	Exclude matches	Off
Exclude bibliography	Off		