3D MAMMOGRAPHY AT A GLANCE

TOMOSYNTHESIS 3D BREAST IMAGING

- 3D Mammography also know as tomosynthesis, produces clear images detecting up to 41 percent more breast cancers while greatly reducing the number of women being called back for additional views by up to 40 percent.
- It is the most accurate mammography available

3D VS 2D BREAST IMAGING

3D

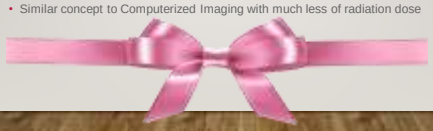
- Camera makes short sweeping motion
- Several slices of imaging of the breast
- Gives approximately 15 slices for radiologist to view
- Clearly see subtle lesions and fine calcifications
- Reduces recall up to 40% (false positives)
- Detects 20-65% more invasive breast cancer
- Significant improved for dense breast tissue
- Low dose high resolution

2D

- Camera does not rotate
- Only 2 images of the breast (one side)
- Some calcification distortion
- False positive findings
- less percentage of invasive breast
- Call back rate higher for dense breast
- Low dose

TOMOSYNTHESIS 3D

- During the 3D part of the exam, the X-ray arm sweeps in a slight arc over the breast, taking multiple images. A computer then uses these images to produce a layered 3D image of the breast tissue. This provides greater detail and allows the radiologist to see "inside" the breast layer by layer.
- Similar concept to Computerized Imaging with much less of radiation dose



3D MAMMOGRAPHY STEREOTACTIC BIOPSY UNIT

- Allows you to easily target lesions, including those visible only in tomosynthesis images.
- Streamlines procedure steps and speeds targeting, resulting in improved workflow and shorter patient procedure time.
- Reduces patient dose, as fewer exposures are required.

UPRIGHT TOMOSYNTHESIS BIOPSY UNIT

- Minimally invasive procedure
- Short procedure time 45 minutes
- Sitting Upright for the procedure
- Several slices of imaging for radiologist to view area of interest
- Biopsy site tissue sampling
- Clip is placed in the biopsy site
- Quick recovery

ULTRASOUND OF THE BREAST

- A breast ultrasound is most often done to find out if a problem found by a mammogram or physical exam of the breast may be a cyst filled with fluid or a solid tumor.
- Breast ultrasound is not usually done to screen for breast cancer. This is because it may miss some early signs of cancer. An example of early signs that may not show up on ultrasound are tiny calcium deposits called microcalcifications.

MAGNETIC IMAGING OF THE BREAST (MRI)

Breast MRI is often used in women who already have been diagnosed with breast cancer, to help measure the size of the cancer, look for other tumors in the breast, and to check for tumors in the opposite breast.

For certain women at high risk for breast cancer, a screening MRI is recommended along with a yearly mammogram. MRI is not recommended as a screening test by itself because it can miss some cancers that a mammogram would find.

MRI USED FOR ADDITIONAL TOOL FOR IMAGING THE BREAST

Although MRI can find some cancers not seen on a mammogram, it's also more likely to find something that turns out not to be cancer (called a false positive). False-positive findings have to be checked out to know that cancer isn't present. This is why MRI is not recommended as a screening test for women at average risk of breast cancer, because it would result in un-needed biopsies and other tests.

WOMEN WITH BREAST EXPANDERS CAN NOT HAVE AN MRI

Tissue expanders are placed routinely for breast cancer patients for **breast** reconstruction. The **expanders** contain ferromagnetic components and not safe to image with MRI.

MEDICAL IMAGING HAS ADVANCED IN BREAST IMAGING FOR BETTER DETECTION OF FINE CALCIFICATIONS THROUGH 3D MAMMOGRAPHY TO DIAGNOSE BREAST CANCER AT AN EARLY STAGE.

SCREENING MAMMOGRAMS ARE CONSIDERED THE INTERNATIONAL GOLD STANDARD FOR DETECTING BREAST CANCER EARLY.

DEDICATED THIS LECTURE TO MY AUNT WHO LOST HER 2ND FIGHT TO BREAST CANCER ON 2/10/2018

Auntie Armineh

LIVE LONG AND PROSPER WITH SCREENING MAMMOGRAPHY