



X-Ray Associates of New Mexico, P.C.

**LIFE AFTER BREAST
CANCER:**

**A BREAST IMAGER'S
PERSPECTIVE**

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BREAST CANCER IN THE UNITED STATES: 2015

- Most common cancer in women:
one woman in 8 by age 95 (20% <50)
 - 5 to 10% is hereditary breast cancer
(these linked to ovarian cancer too)
- Breast cancer incidence going up, but
the death rate down 35% since 1988!
 - Mostly due to mammography
 - Over 50% were getting screened yearly
 - Also partly due to better treatment



MAMMOGRAPHY: OUR BEST SCREENING TOOL FOR BREAST CA

- **EFFECTIVE:** scientific proof of benefit in decreasing breast cancer mortality
- **AVAILABLE AND REPRODUCABLE:** over 12,000 mammography units in U.S.
- **AFFORDABLE:** still just over \$100 in U.S.

MAMMOGRAPHY IS THE ONLY SCREENING TEST THAT MEETS ALL THREE CRITERIA!

HOW DO WE KNOW MAMMOGRAPHY WORKS TO SAVE LIVES FROM BREAST CANCER?

- RANDOMIZED CONTROLLED TRIALS WITH SCREENING MAMMOGRAPHY
- ORGANIZED NATIONAL SCREENING MAMMOGRAPHY PROGRAMS





DR. LASZLO TABAR RANDOMIZED CONTROLLED SCREENING STUDY

- 29 year **follow-up on Swedish Two-County Trial**
 - **Evaluated 133,000 women, with screening beginning in the trial in 1977**
- There was a **31% decrease** in BC deaths in group **invited** to screening after 29 years!
 - **Most powerful randomized controlled study ever performed!**

*- Tabar L, Vitak B, Chen THH, Yen AMF, Cohen A, et al: Swedish Two-County Trial: Impact of Mammographic Screening on Breast Cancer Mortality during 3 Decades. **Radiology**, September 2011, Vol. 260, P. 658



SWEDISH ORGANIZED SCREENING MAMMO DATA

- Review of screening outcomes in nine counties (45% of the population of Sweden)
- Death rate in screened group decreased **44%** since 1977!



If breast cancer is detected when **less than 1.5 cm** in size, and **before** it has spread to the lymph nodes, the five year survival rate is

98%



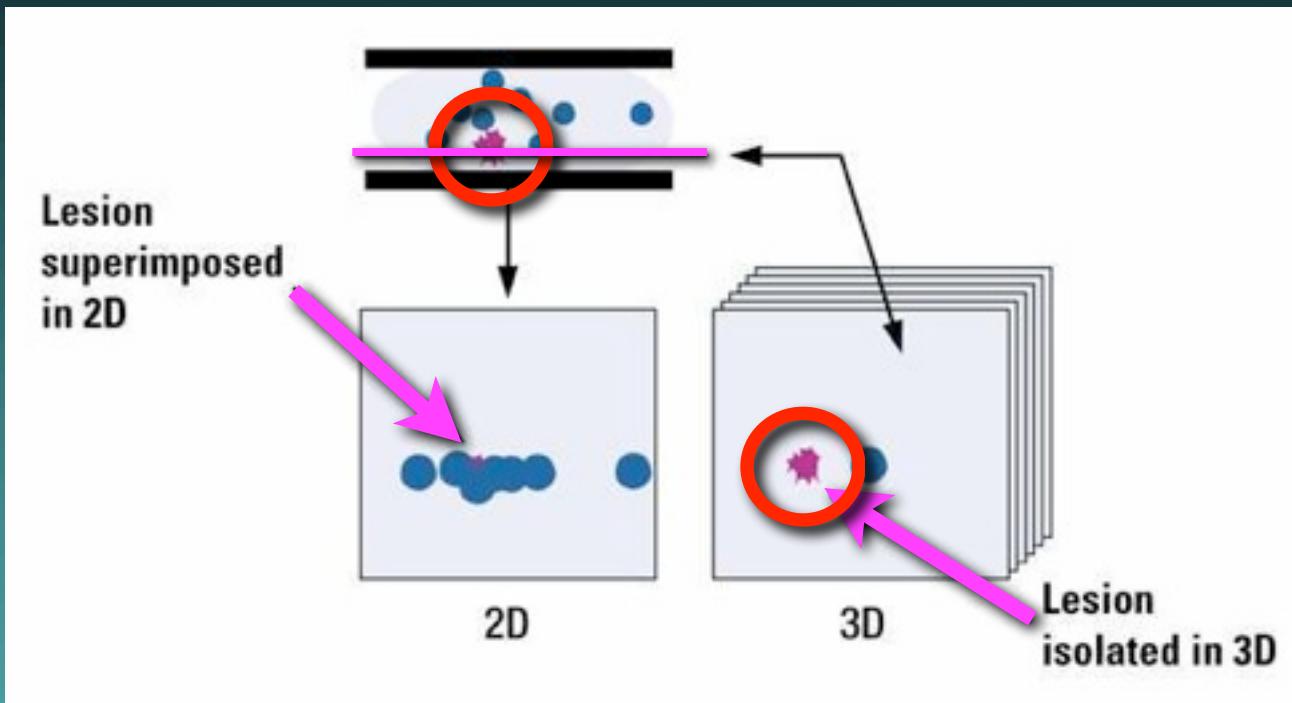


SCREENING MAMMOGRAPHY: PROBLEMS

- **DENSE BREAST TISSUE**
 - Cancer difficult to discern, if not impossible
- **OVERLAPPING BREAST TISSUE**
 - Routine mammogram image is a summation image of overlapping structures which can make normal tissue look like a tumor

ONE SOLUTION IS TOMOSYNTHESIS

Tomosynthesis is a three-dimensional mammographic examination that can minimize the effects of structure overlap within the breast





OTHER USEFUL TESTS FOR BREAST CANCER SCREENING

- FOR WOMEN WITH DENSE BREASTS, OR OTHER HIGHER RISK FACTORS (FAMILY HISTORY, ETC.):
 - SCREENING BREAST ULTRASOUND
 - SCREENING BREAST MRI
- HOWEVER, MAMMOGRAPHY REMAINS OUR NUMBER ONE OVERALL SCREENING METHOD AT THIS TIME

**SO- GIVEN ALL THESE
WONDERFUL IMAGING
TOOLS, HOW DO WE USE
THEM TO HELP MAINTAIN
QUALITY LIFE AFTER
BREAST CANCER?**

**FIRST, A LOOK AT
SOME NUMBERS:**





BREAST CANCER INCIDENCE & SURVIVAL: 2008 STATISTICS

- NUMBER OF BREAST CANCER CASES:
185,000 (excluding DCIS)
- NUMBER OF BREAST CANCER DEATHS:
40,000
- THE LARGE MAJORITY WILL SURVIVE: 80%
- CURRENTLY, THERE ARE 2.5 MILLION
BREAST CANCER SURVIVORS IN THE U.S.



BREAST CANCER STAGE AT DIAGNOSIS: 20 YR. FOLLOWUP

DATA FROM NATIONAL CANCER INSTITUTE

STAGE	1980	2001	5 YR. SURVIVAL
DCIS	3%	21%	100%
STAGE 1	25%	42%	98%
STAGE 2	45%	25%	80%
STAGE 3-4	14%	7%	25%
UNKNOWN	13%	5%	26%

[HTTP://WWW.SEER.CANCER.GOV](http://www.seer.cancer.gov)



BREAST CANCER SURGERY

- CONSERVATION (“LUMPECTOMY”)
 - WIDE EXCISION OF THE CANCER
 - SENTINEL NODE BIOPSY (AXILLARY NODE DISSECTION IN CERTAIN CASES)
- FOLLOWUP STUDIES OVER MORE THAN 20 YEARS SHOW SURVIVAL TO BE JUST AS GOOD AS WITH MASTECTOMY

(I WILL NOT BE DISCUSSING RADIOTHERAPY OR CHEMOTHERAPY, AS THOSE ARE OUTSIDE MY AREA OF EXPERTISE)

1990



2007



- LUMPECTOMY

- MASTECTOMY



IMAGING FOLLOWUP OF THE BREAST CANCER PATIENT

- USUALLY INVOLVES **MORE THAN JUST ROUTINE SCREENING (EXCEPTION: IF PATIENT HAS HAD MASTECTOMY, ROUTINE SCREENING ONLY IS NEEDED OF REMAINING BREAST)**
- **MAY REQUIRE ADDITIONAL VIEWS OF THE LUMPECTOMY SITE, OR FURTHER “TAILORING” OF THE EXAM**
- **MAY INCORPORATE TOMOSYNTHESIS, BREAST ULTRASOUND, OR EVEN MRI**
- **SHOULD HAVE “ON-LINE” INTERPRETATION AND COMMUNICATION WITH THE PATIENT**



NORMAL MAMMO FINDINGS IN POST-LUMPECTOMY PATIENTS

- BREAST TISSUE AND SKIN THICKENING
- MASS DUE TO SEROMA
- TISSUE DISTORTION AT LUMPECTOMY SITE
- REDUCED VOLUME OF THE BREAST
- AXILLA DEFECT (IF HAD DISSECTION HERE)
- CLIPS AT LUMPECTOMY SITE (OR AXILLA)
- CALCIFICATIONS DUE TO FAT NECROSIS

THESE MAKE THE BREAST IMAGER'S
JOB EVEN MORE DIFFICULT!



ABNORMAL FINDINGS ON FOLLOWUP IMAGING

- “RECURRENCE” OF ORIGINAL TUMOR
 - RECURRENCE RATE: ABOUT 1% PER YEAR
 - MOST RECURRENCES EASILY TREATED, WITH VERY LOW MORTALITY RATE
- NEW CANCER ELSEWHERE IN SAME BREAST, OR IN OPPOSITE BREAST
 - 2 TO 3 TIMES MORE LIKELY THAN IN REST OF POPULATION



TIMING OF IMAGING FOR BREAST CANCER PATIENTS

- **FOR LUMPECTOMY SIDE:**
 - EVERY 6 MONTHS FOR 3 TO 5 YEARS, THEN YEARLY THEREAFTER
 - MAMMOGRAPHY, WITH OR WITHOUT ULTRASOUND (always include axilla on U/S)
- **FOR OPPOSITE SIDE:**
 - YEARLY MAMMOGRAM
- **ALSO- CONSIDER ADDING BREAST MRI EVERY 2 TO 3 YEARS, ESPECIALLY IF HIGH RISK (BRCA, ETC.)**



TIMING OF IMAGING FOR BREAST CANCER PATIENTS

- **FOR MASTECTOMY PATIENTS:**
 - MAMMOGRAM OF OPPOSITE SIDE YEARLY
 - CONSIDER BREAST MRI EVERY 2-3 YEARS,
ESPECIALLY IF HIGH RISK
- **FOR ALL PATIENTS:**
 - IF HAVE STRONG FAMILY HISTORY OF BREAST CANCER, ASK ABOUT BRCA TEST
 - IF **BRCA POSITIVE**, MRI SHOULD BE DONE YEARLY, AND FAMILY MEMBERS TESTED TOO



SPECIAL NEEDS OF BREAST CANCER PATIENTS

- BREAST TISSUE ON LUMPECTOMY SIDE IS MORE **TENDER/SENSITIVE**: MAMMOGRAPHER SHOULD TAKE SPECIAL CARE
- PATIENT IS MORE APPREHENSIVE THAN MOST: RADIOLOGIST SHOULD BE AWARE OF “POST-CHEMO SYNDROME” (**FATIGUE, MENOPAUSE SYMPTOMS, JOINT PAIN, “CHEMO BRAIN”**), & RESPOND ACCORDINGLY
- IMMEDIATE RESULTS TO PATIENT - “GOOD NEWS”
- CONTINUED STRONG COMMUNICATION BETWEEN PATIENT AND ENTIRE TEAM!



SUMMARY

- YES, THERE IS QUALITY LIFE AFTER BREAST CANCER!
- IMAGING THE BREAST CANCER PATIENT IS ESSENTIAL TO MAINTAINING QUALITY LIFE, AND REQUIRES SPECIAL TECHNIQUES
- TOMOSYNTHESIS, ULTRASOUND & MRI ARE THEREFORE OFTEN UTILIZED AS SUPPLEMENTS TO MAMMOGRAPHY
- THE BREAST IMAGING TEAM SHOULD BE RESPONSIVE TO THE BREAST CANCER PATIENT'S SPECIAL NEEDS AND ISSUES

**QUESTIONS OR
INFORMATION :**

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Thank
you!