



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

**LIFE AFTER BREAST
CANCER:
A BREAST IMAGER'S
PERSPECTIVE**

MICHAEL N. LINVER, MD, FACR



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 REPRODUCIBLE:** 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**

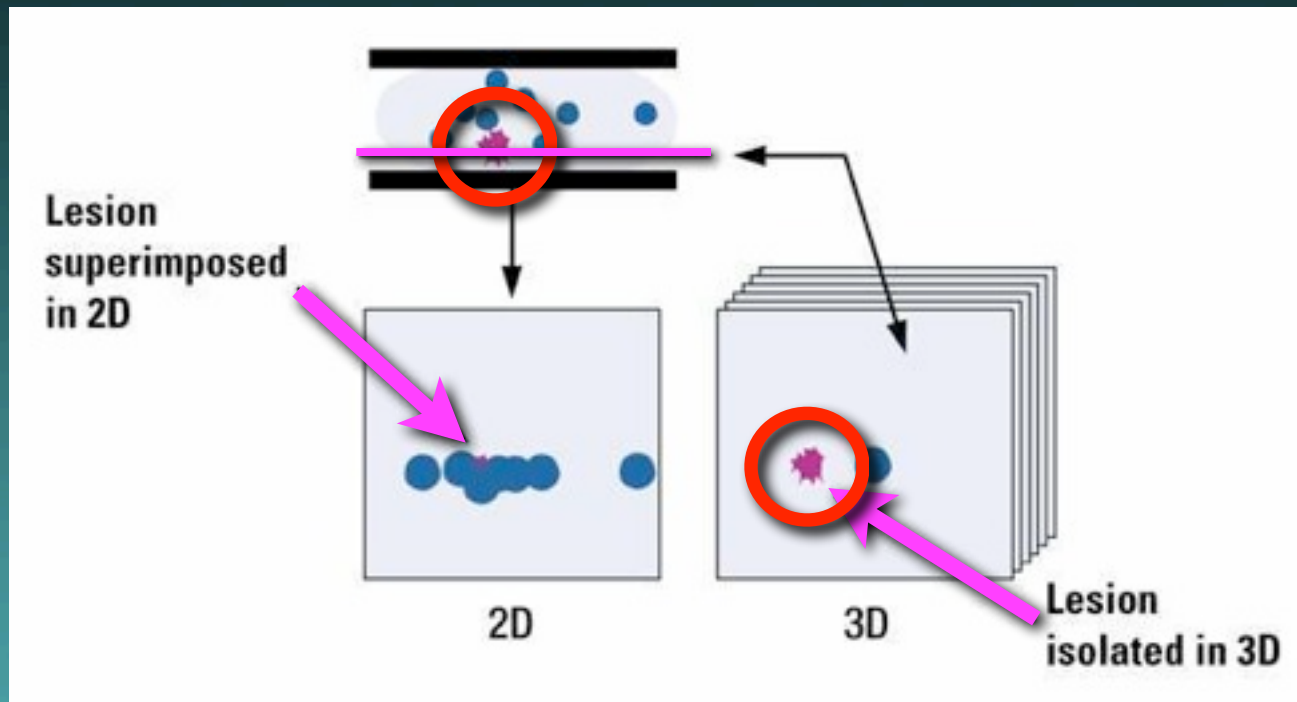
- Cancer difficult to discern, if not impossible

- **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)



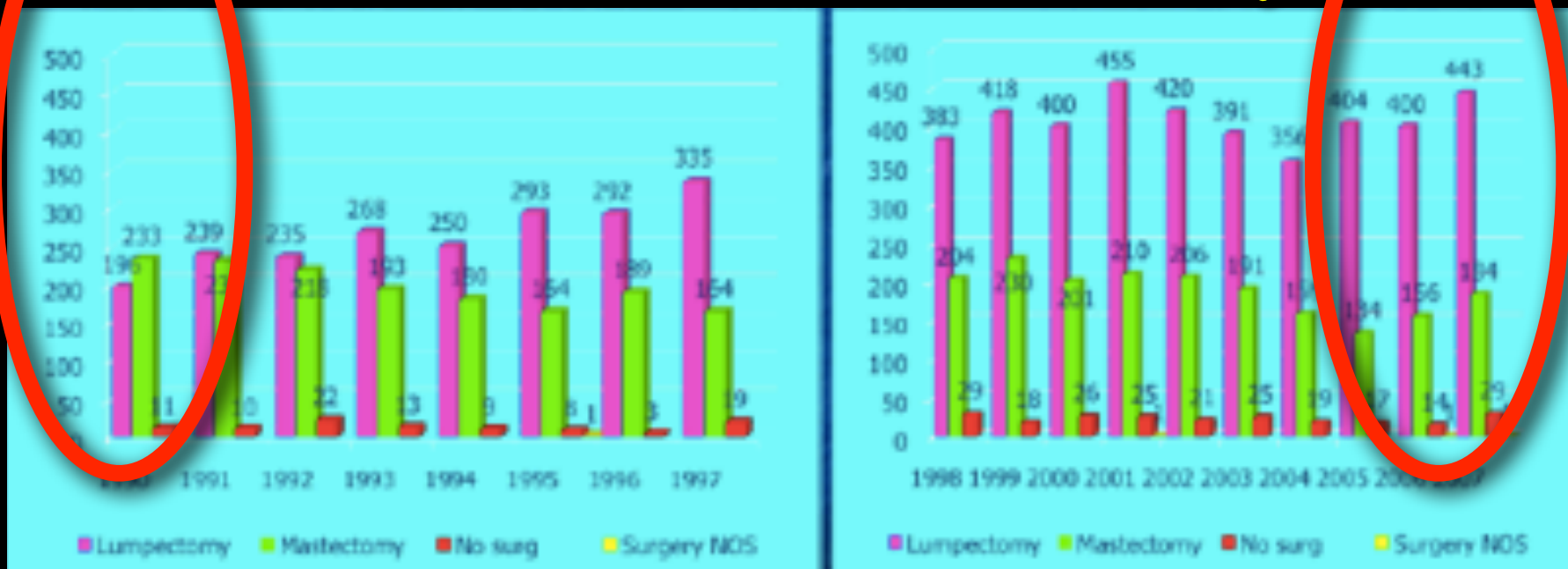
BREAST CANCER SURGERY

- **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**

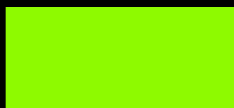
(I WILL NOT BE DISCUSSING RADIOTHERAPY OR CHEMOTHERAPY, AS THOSE ARE OUTSIDE MY AREA OF EXPERTISE)

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 :**

**email address:
MAMMOMIKE@AOL.COM**





Thank
you!

