SURGICAL MANAGEMENT OF DUCTAL CARCINOMA IN SITU

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SEATTLE CANCER CARE ALLIANCE

FRED HUTCHINSON

FINANCIAL DISCLOSURE

- Susan G. Komen for the Cure®
- European School of Oncology (ESO)
- Pan American Health Organization (PAHO)
- Sheikh Mohammed Hussein Al-Amoudi Center of Excellence in Breast Cancer
- American Society of Clinical Oncology (ASCO)
- Navidea Biopharmaceuticals
- GE Healthcare
- Sanofi-Aventis

DUCTAL CARCINOMA IN SITU
Outline

- Diagnosis and extent of disease evaluation
- Breast conservation vs. mastectomy
- Surgical margins and nipple-sparing
- Adjuvant radiation and endocrine therapy

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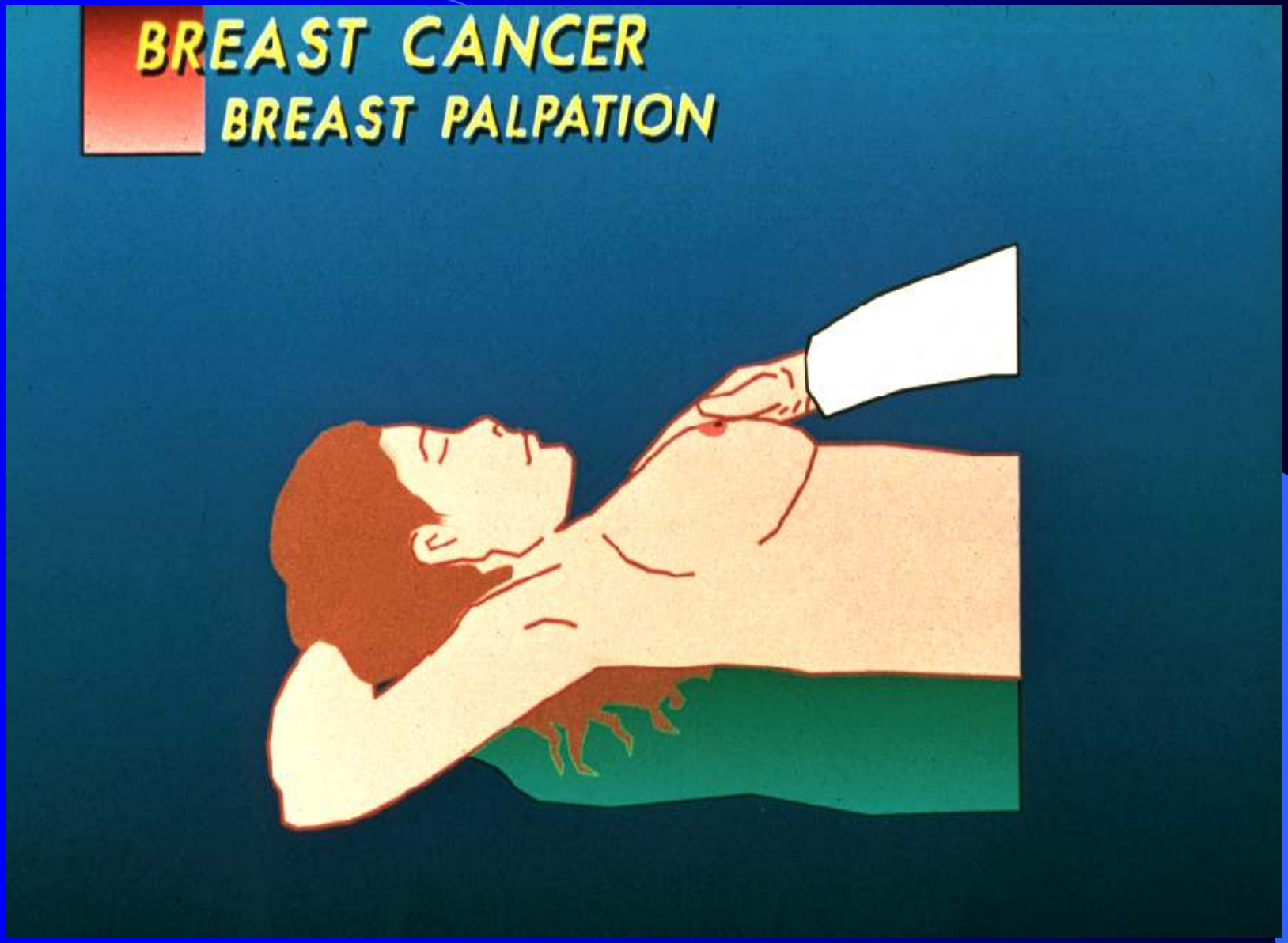
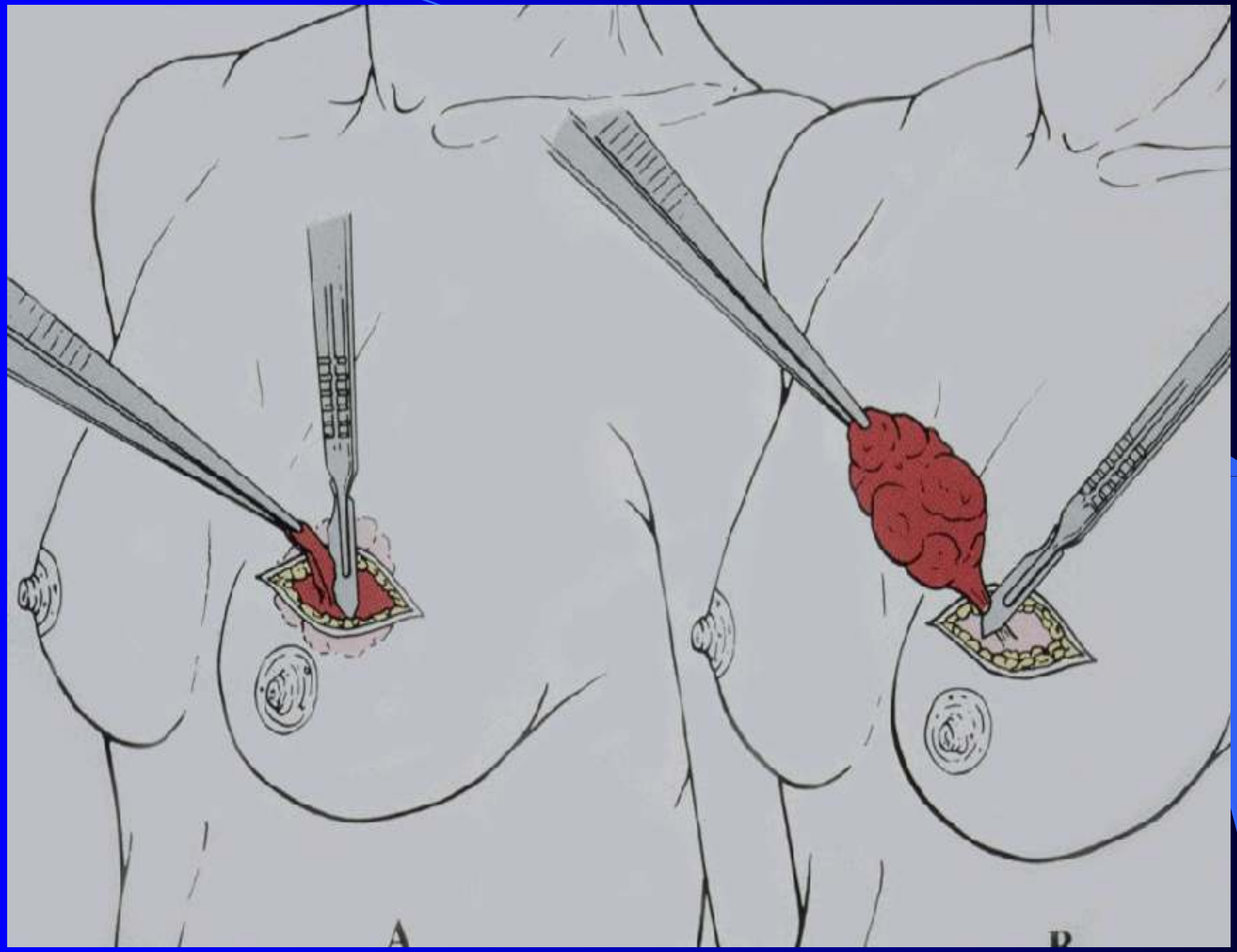
BREAST CANCER

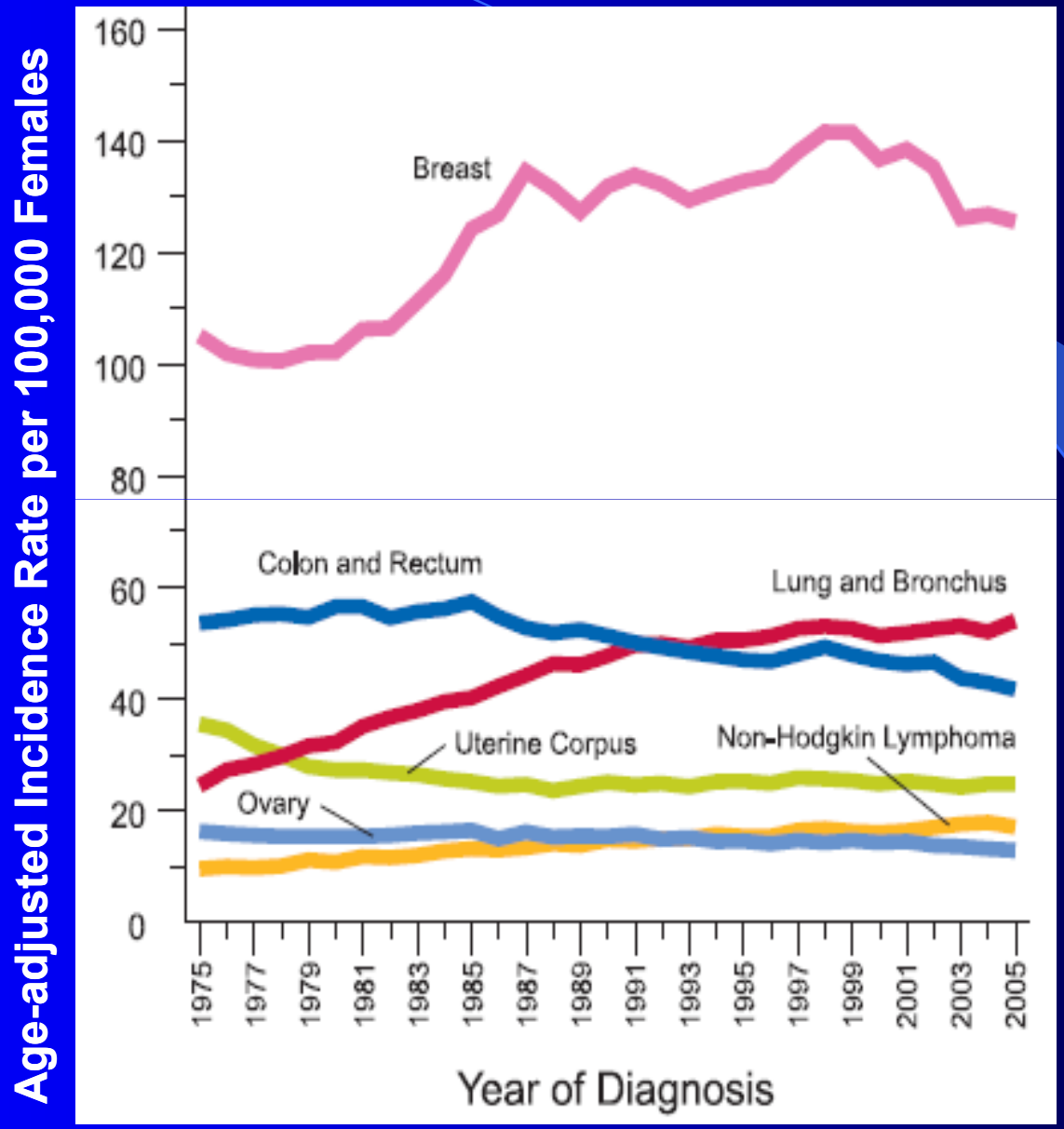
BREAST PALPATION



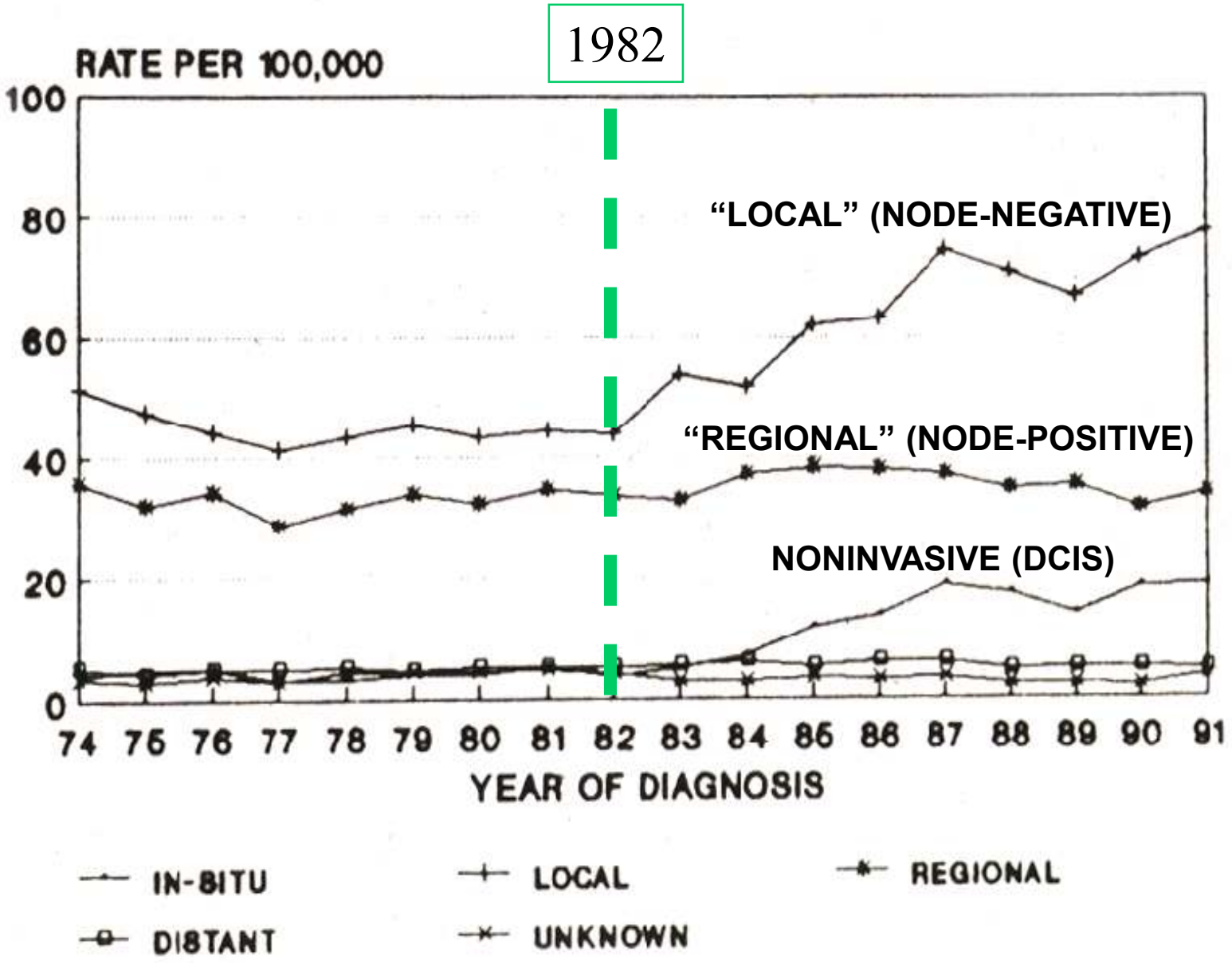


SCREENING MAMMOGRAM:
Cranio-Caudal (CC) View

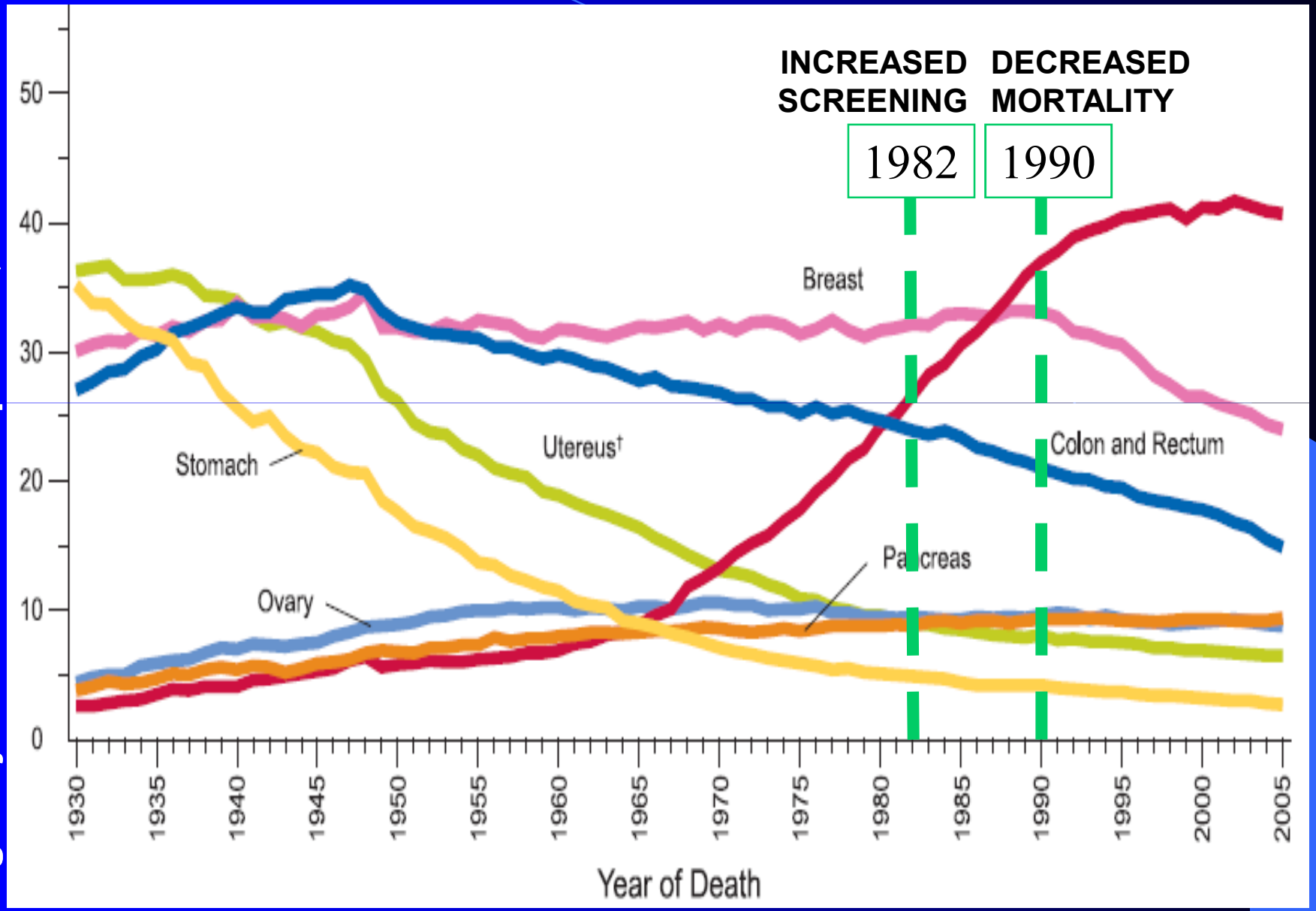
U.S. FEMALE CANCER INCIDENCE RATES, 1973-2005



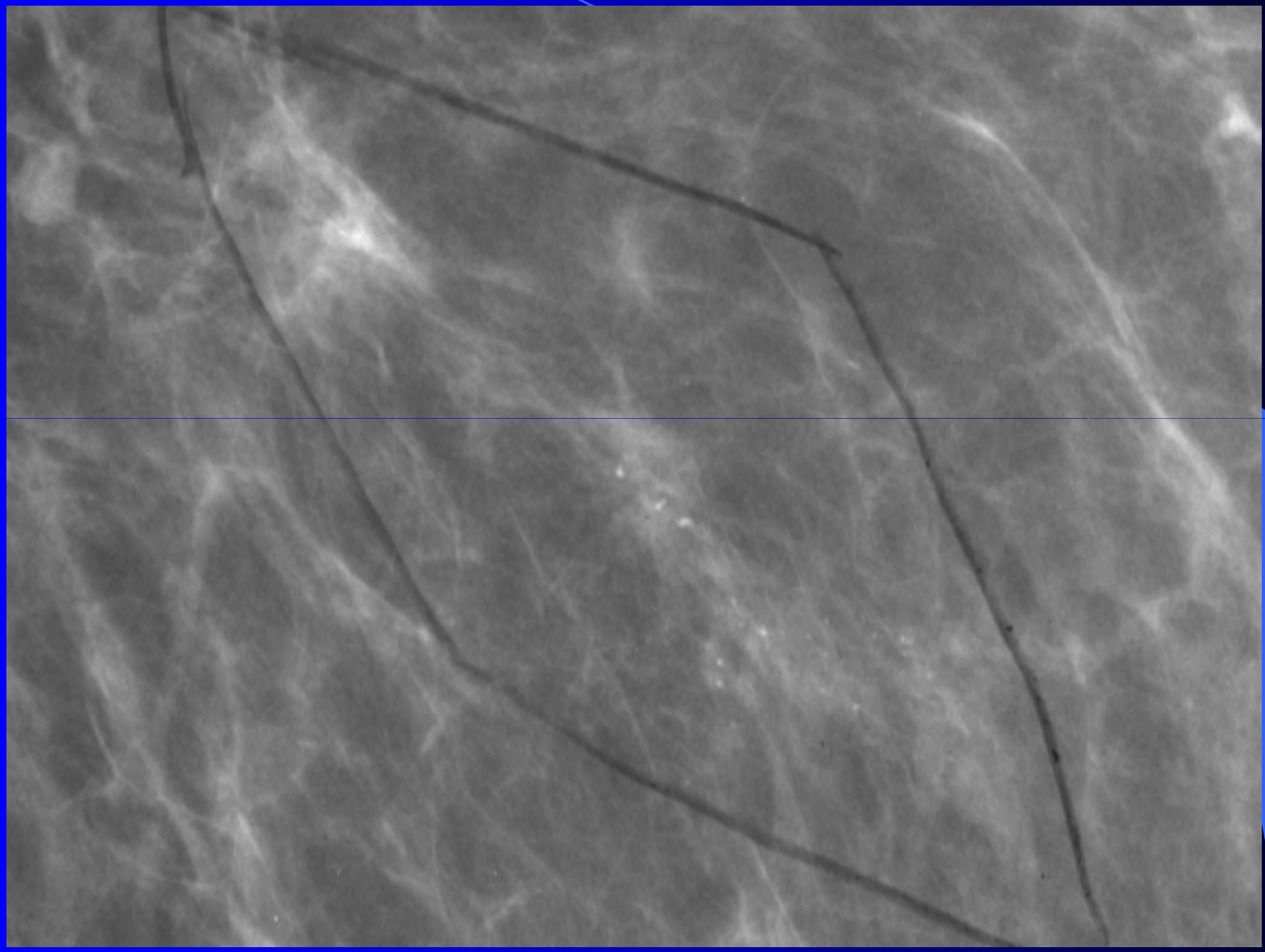
U.S. AGE-ADJUSTED BREAST CANCER, 1973-1997



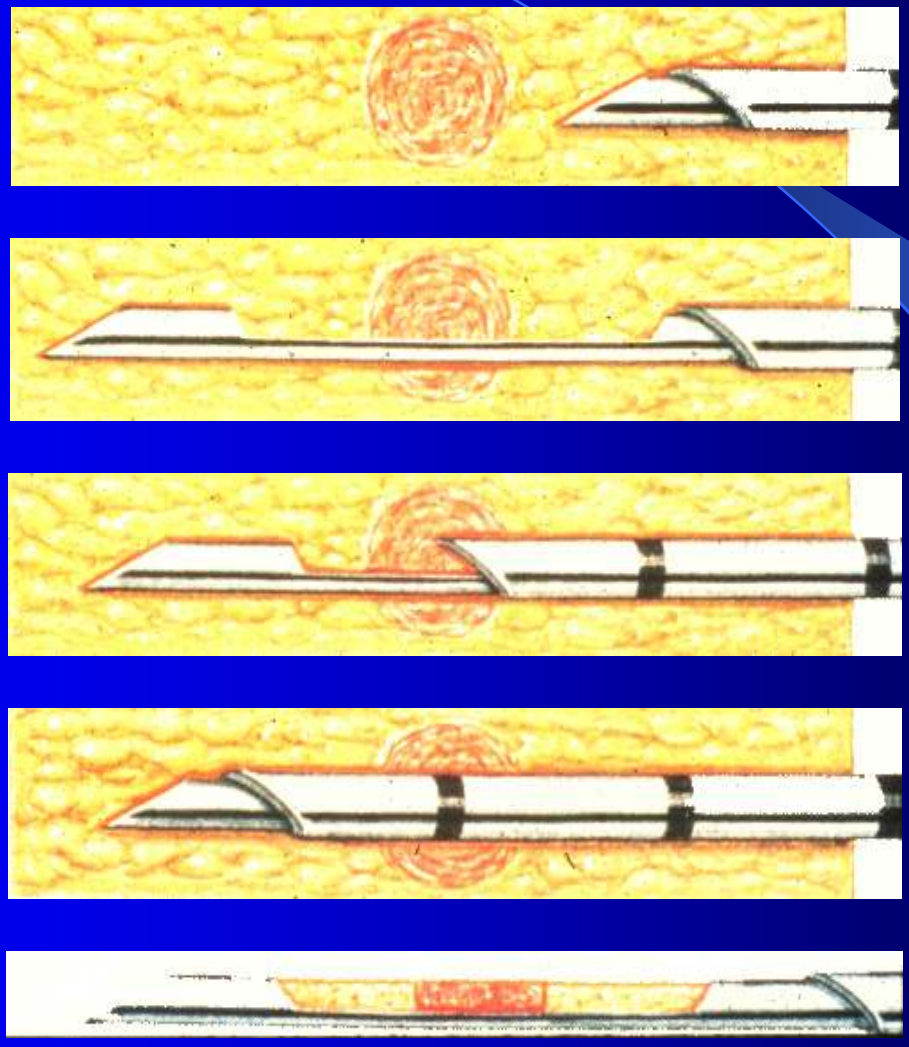
U.S. FEMALE CANCER DEATH RATES, 1930-2005



DIAGNOSTIC MAMMOGRAM:

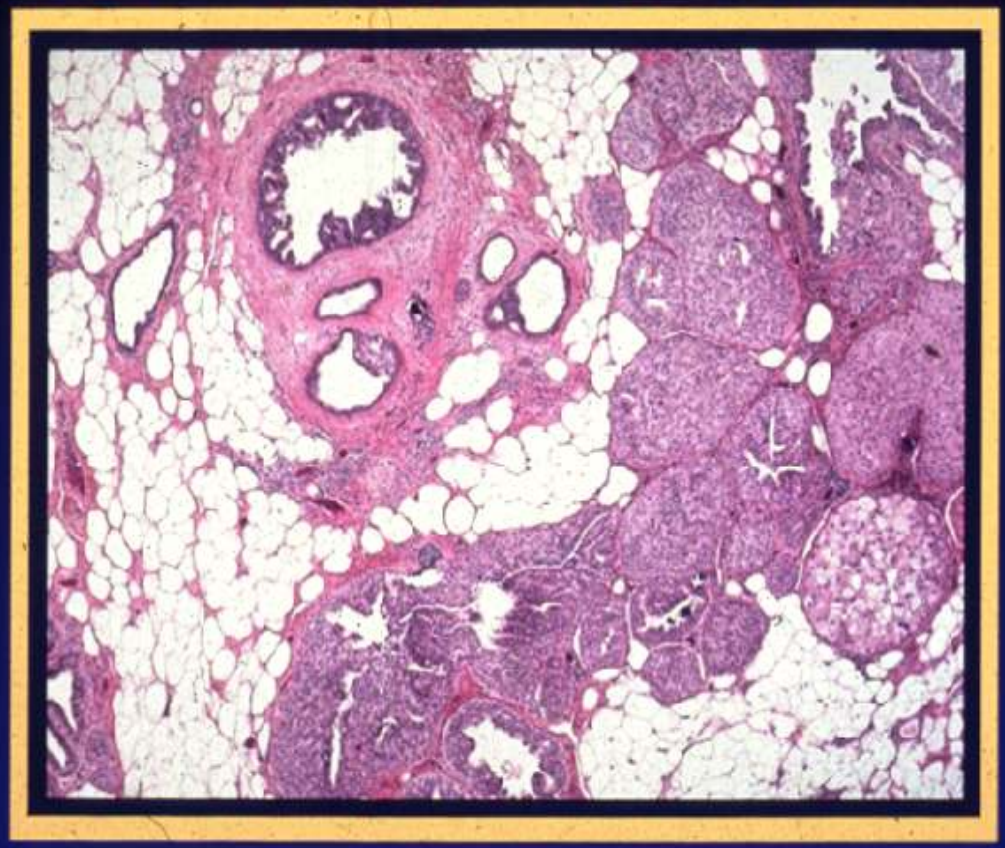


CORE NEEDLE BIOPSY:



IN SITU BREAST CANCER

DCIS with Comedo Necrosis



Vacuum Assisted **Biopsy System**

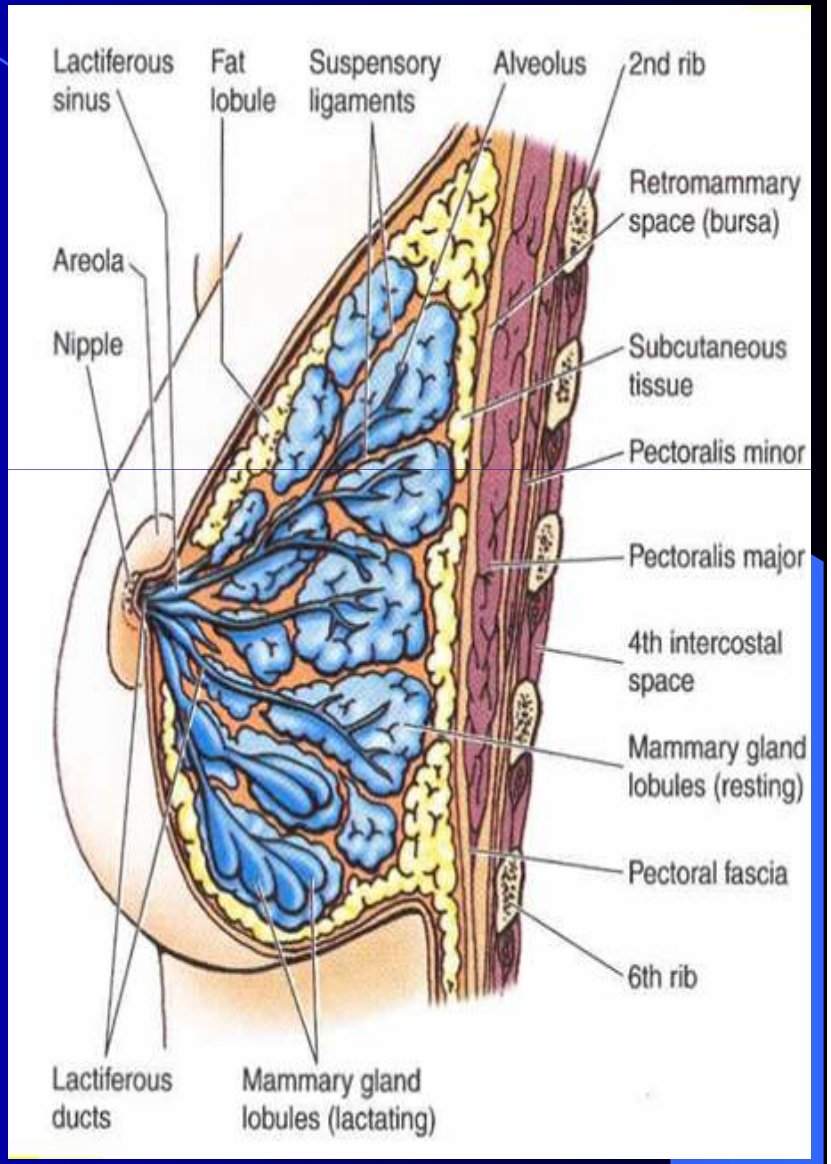
National Comprehensive Cancer Network®

NCCN Guidelines Version 1.2012
Breast Cancer

DIAGNOSIS	WORKUP	PRIMARY TREATMENT
Ductal carcinoma in situ (DCIS) Stage 0 Tis, N0, M0 [a]	• History and physical exam • Diagnostic bilateral mammogram • Pathology review • Determination of tumor estrogen receptor (ER) status • Genetic counseling if patient is high risk for hereditary breast cancer	Lumpectomy without lymph node surgery + whole breast radiation therapy (category 1) or Total mastectomy with or without sentinel node biopsy ± reconstruction or Lumpectomy without lymph node surgery without radiation therapy (category 2B)

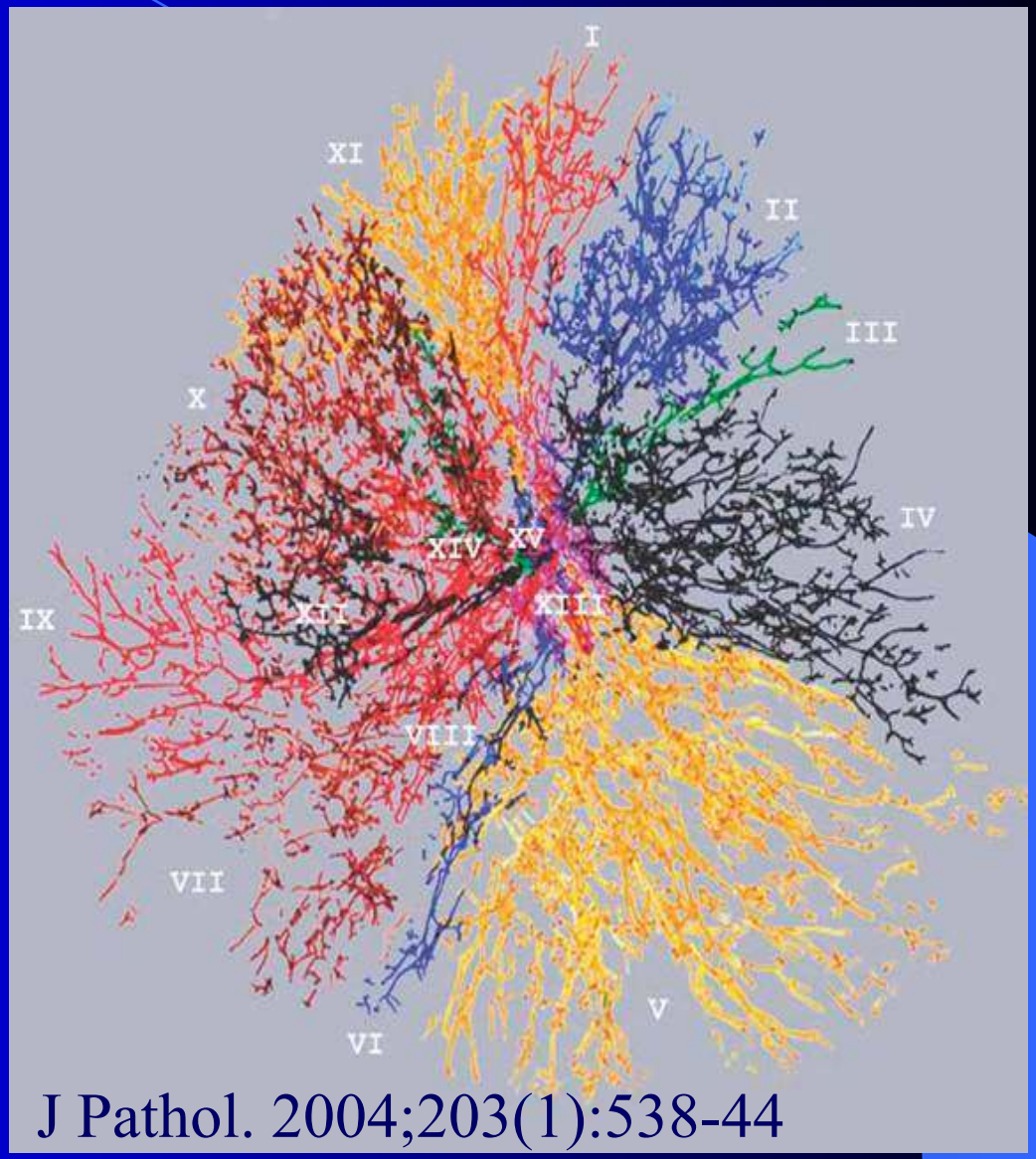
SEGMENTAL BREAST ANATOMY

- Ductal tree follows segmental distribution
- Breast cancers often follow anatomy of ductal tree
- Collateral circulation permits lumpectomy without necrosis



SEGMENTAL BREAST ANATOMY

- Going and Moffat, 2002 University of Glasgow
- 2mm serial sections of autopsied breast
- 3-D computer model reconstruction
- Segmental ductal anatomy observed



J Pathol. 2004;203(1):538-44

SEGMENTAL BREAST ANATOMY

- Sir Astley Cooper (1768-1841)
- Gross autopsy breast specimens
- Wax / mercury ductal injections
- Segmental ductal anatomy observed

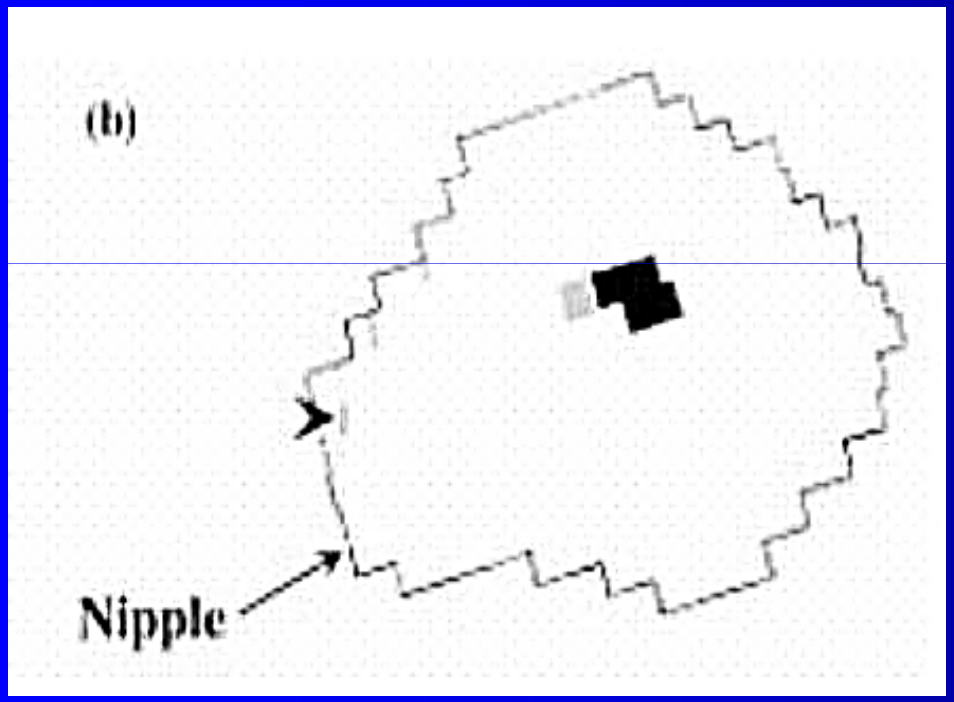
CANCER DISTRIBUTION PATTERNS

BREAST CANCER PATTERNS: Disease Distribution Categories

- Localized
- Segmentally Extended
- Irregularly Extended

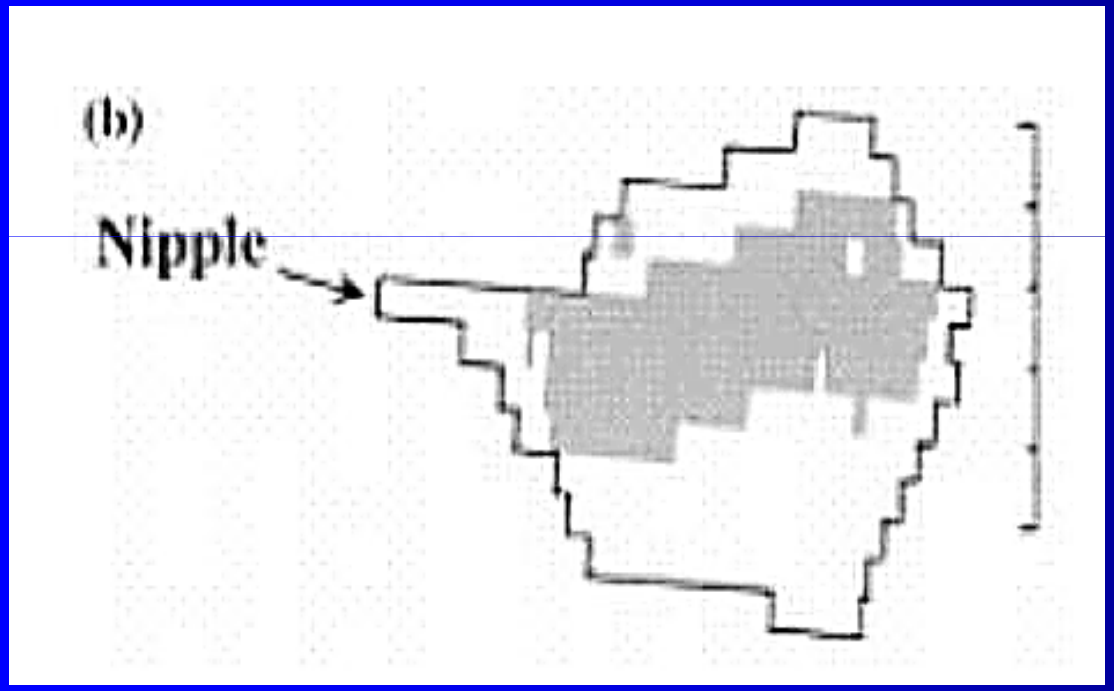
Amano et al., Breast Cancer Res Treat: 60:43, 2000

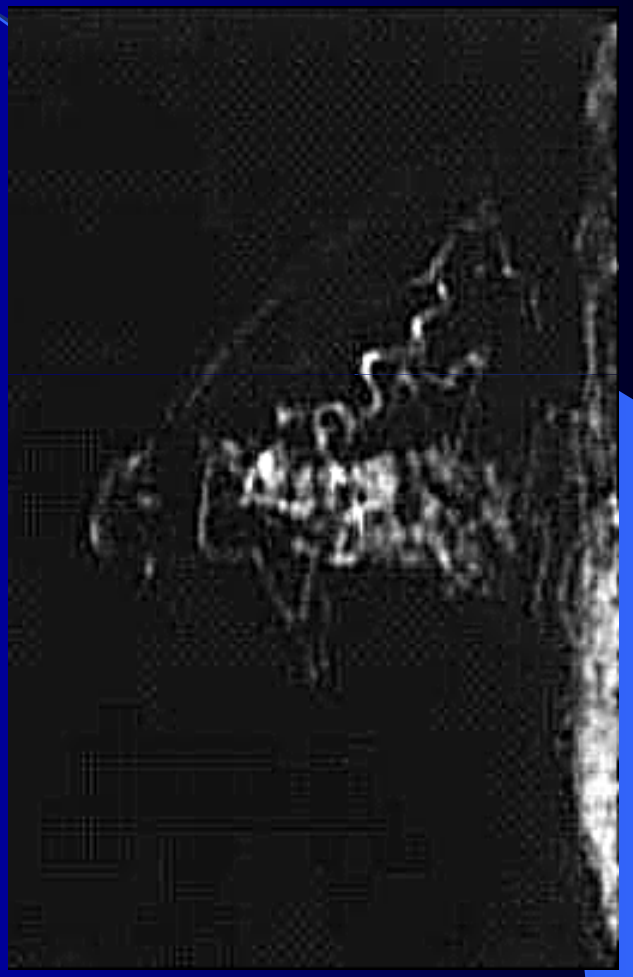
BREAST CANCER PATTERNS: Localized



Amano et al., Breast Cancer Res Treat: 60:43, 2000

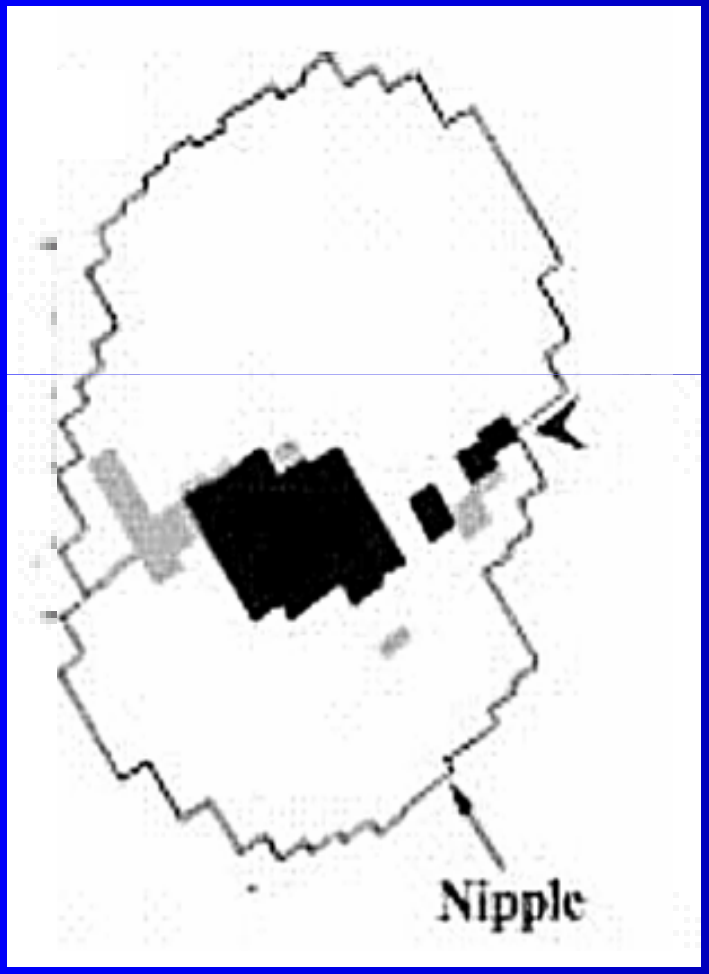
BREAST CANCER PATTERNS: Segmentally Extended

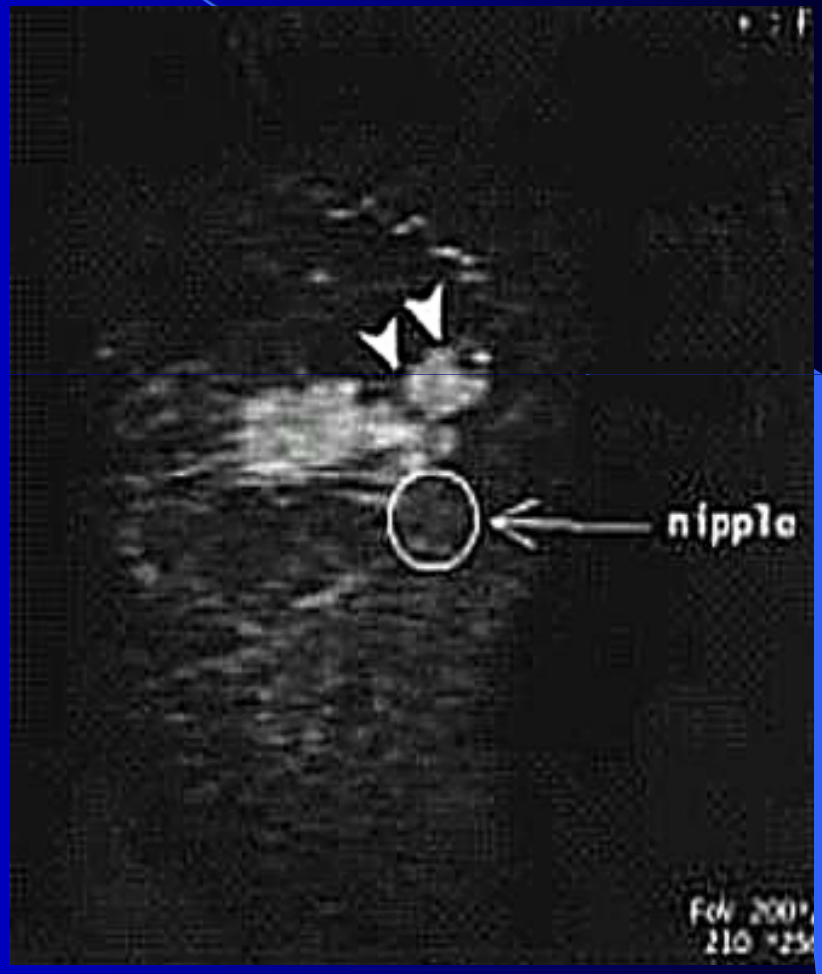




Amano et al., Breast Cancer Res Treat: 60:43, 2000

BREAST CANCER PATTERNS: Irregularly Extended





Amano et al., Breast Cancer Res Treat: 60:43, 2000

BREAST CANCER PATTERNS: Partial Mastectomy Selection

- Localized - lumpectomy
- Segmentally Extended - oncoplastic
- Irregularly Extended – mastectomy

Amano et al., Breast Cancer Res Treat: 60:43, 2000

MRI FOR EXTENT OF DISEASE: Additional Biopsies

111 consecutive women with 121 cancerous breasts

- Median age 48.7yrs; 50% had palpable disease
- Mammographic sensitivity 100% in fatty breasts

Biopsy before definitive surgery

- MRI: 145 additional biopsies: 66 were benign; 12 were atypical
- Mammography: 43 biopsies: 20 were benign; 6 were atypical
- Ultrasound: 93 biopsies: 42 were benign; 6 were atypical

Berg, et al., Radiology 233:830,2004

MRI FOR EXTENT OF DISEASE: Impact on Surgical Management

8.1% (95% CI, 5.9 –11.3) of all women eligible for breast-conserving surgery were treated with mastectomy because of MRI-only detection of additional disease

Additional 5.5% (95% CI, 3.1–9.5) of women had more extensive surgery (wider excision or mastectomy) because of false-positive findings on MRI including 1.1% (95% CI, 0.3–3.6) who converted to mastectomy

Houssami and Hayes, CA Cancer J Clin 59:290, 2009

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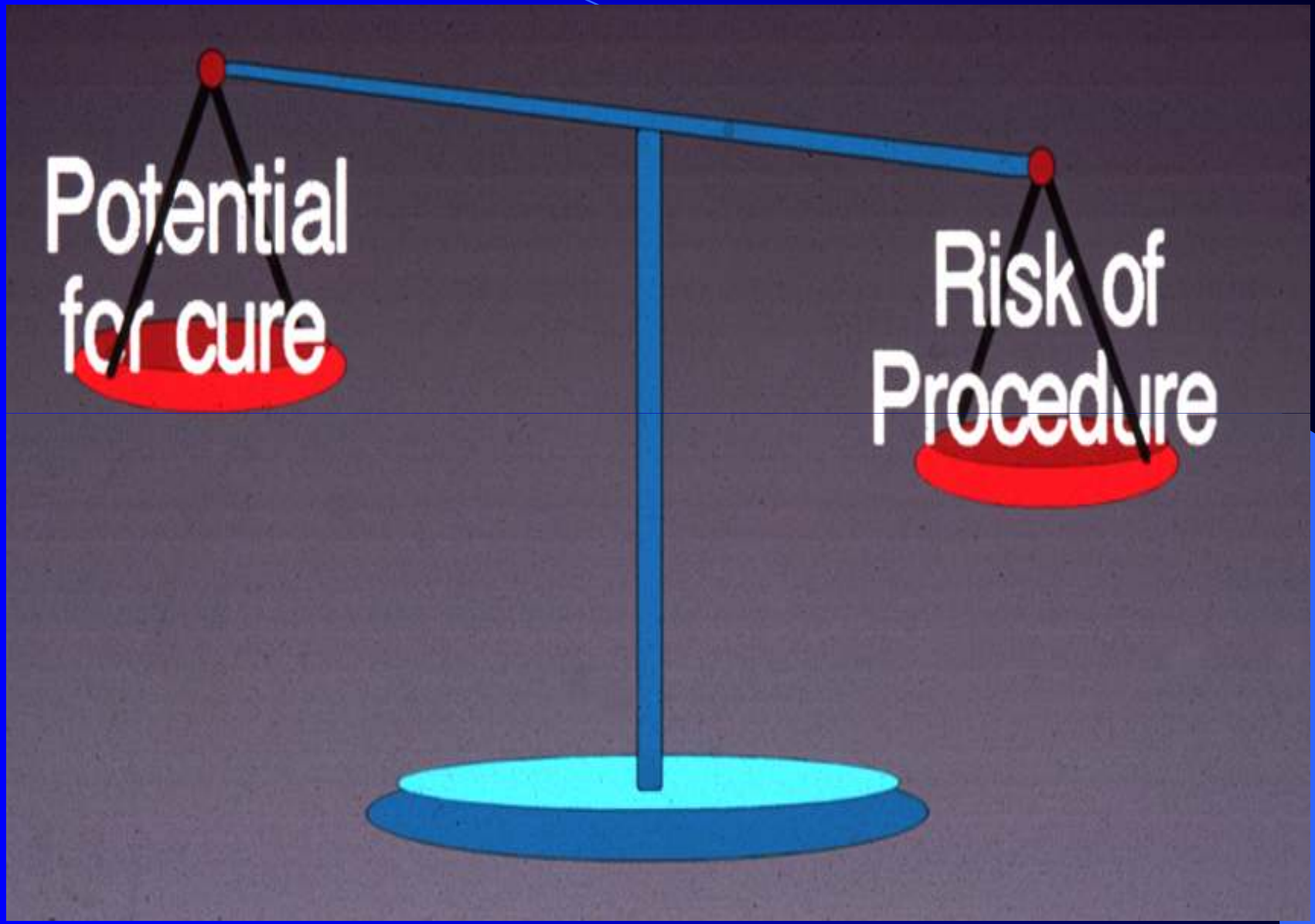
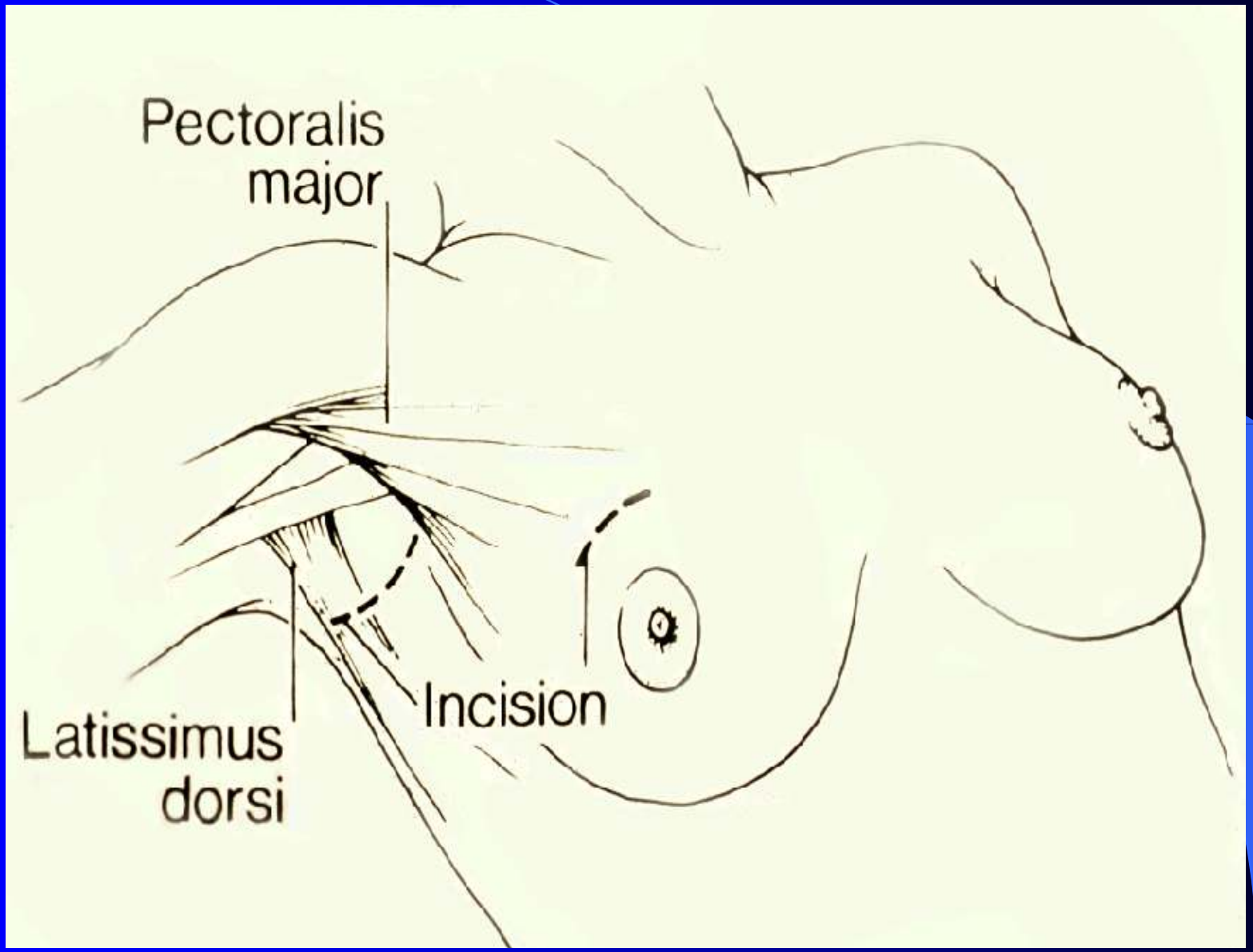
RADICAL MASTECTOMY

MODIFIED RADICAL MASTECTOMY

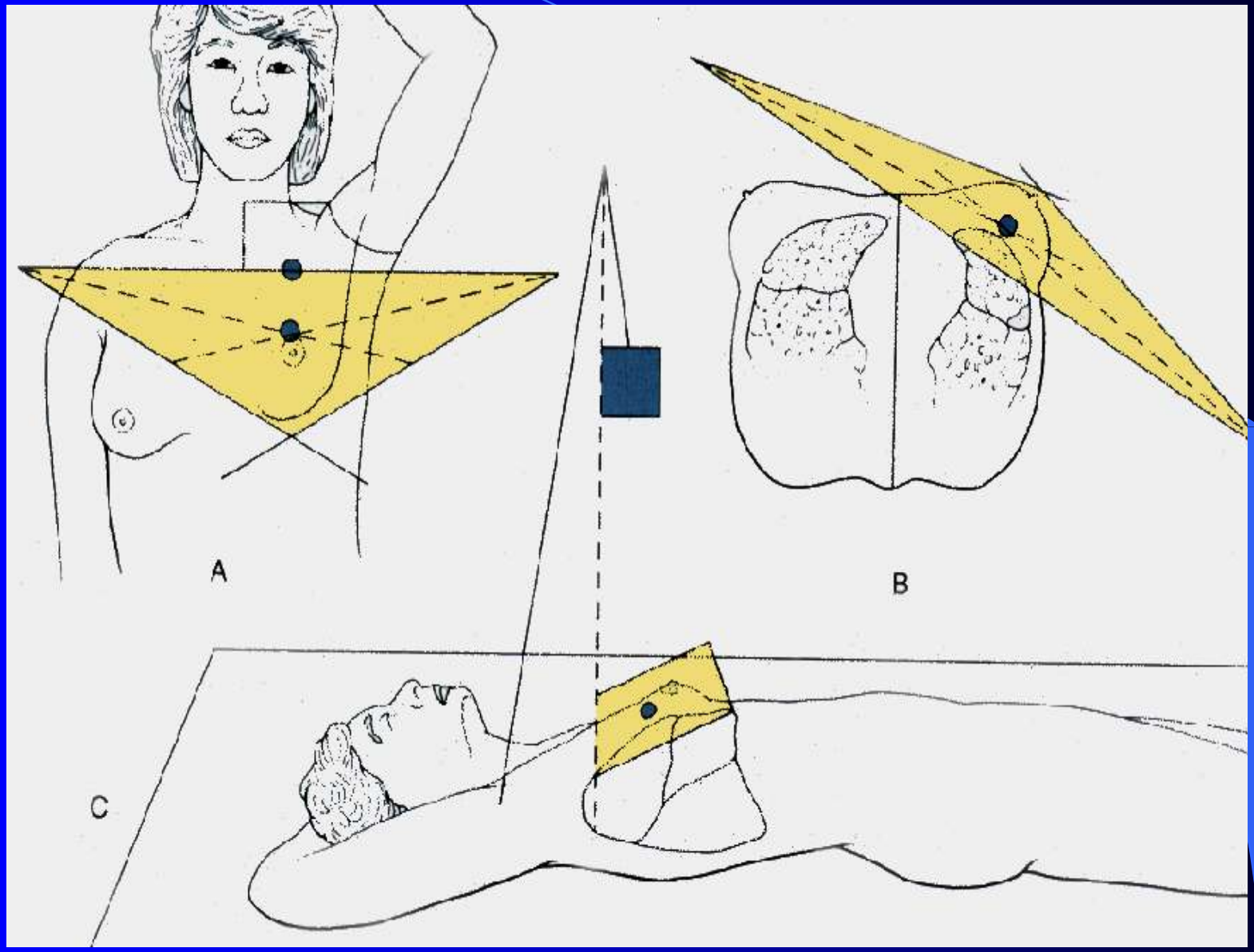
EVOLUTION IN CANCER TREATMENT



BREAST CONSERVING SURGERY



BREAST CONSERVING RADIATION THERAPY



BREAST CONSERVATION: Long-term validation

The New England Journal of Medicine

VOLUME 347 OCTOBER 17, 2002 NUMBER 16

TWENTY-YEAR FOLLOW-UP OF A RANDOMIZED TRIAL COMPARING TOTAL MASTECTOMY, LUMPECTOMY, AND LUMPECTOMY PLUS IRRADIATION FOR THE TREATMENT OF INVASIVE BREAST CANCER

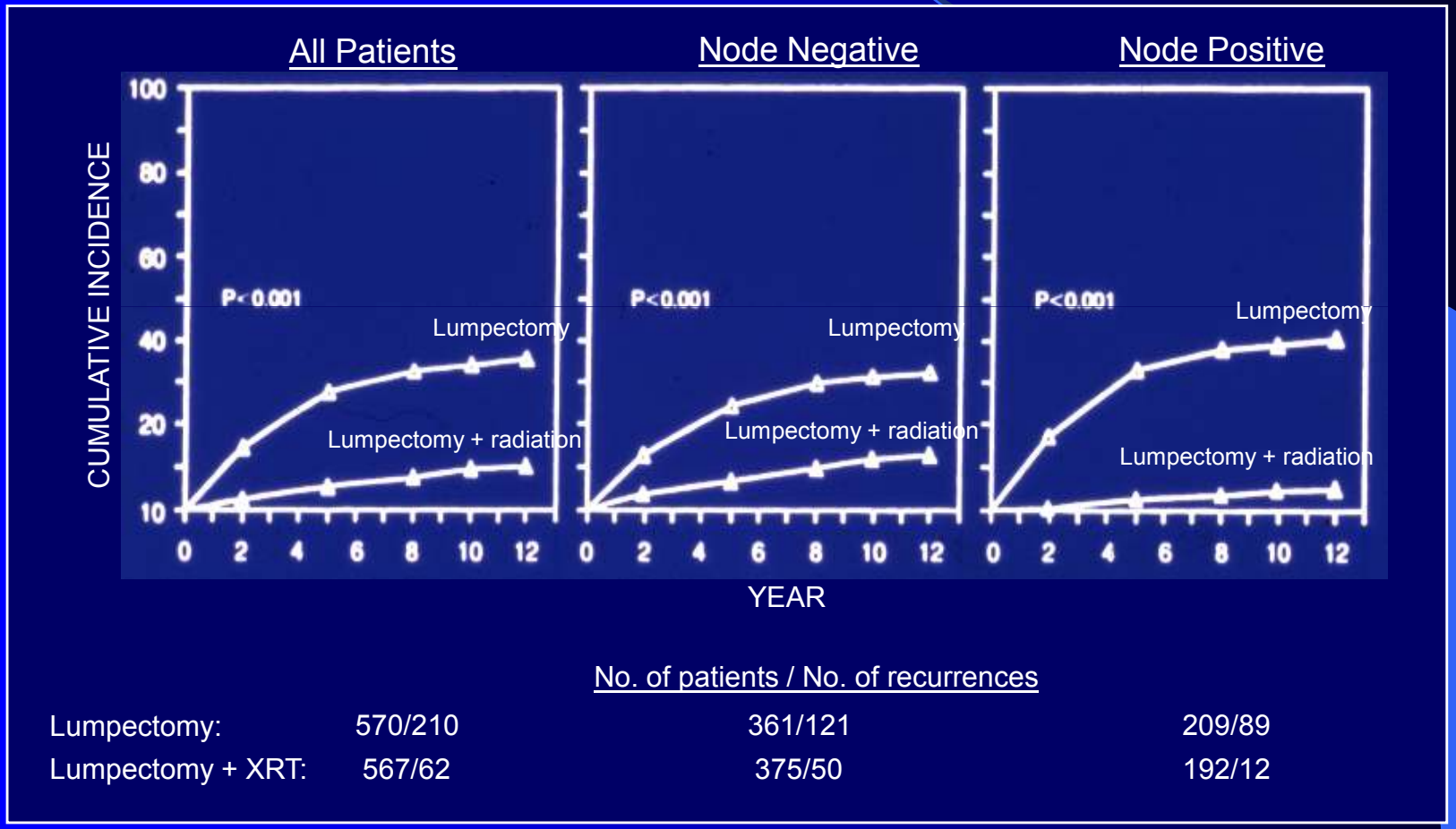
BERNARD FISHER, M.D., STEWART ANDERSON, PH.D., JOHN BRYANT, PH.D., RICHARD G. MARGOLESE, M.D., MELVIN DEUTSCH, M.D., EDWIN R. FISHER, M.D., JONG-HYEON JEONG, PH.D., AND NORMAN WOLMARK, M.D.

TWENTY-YEAR FOLLOW-UP OF A RANDOMIZED STUDY COMPARING BREAST-CONSERVING SURGERY WITH RADICAL MASTECTOMY FOR EARLY BREAST CANCER

UMBERTO VERONESI, M.D., NATALE CASCINELLI, M.D., LUIGI MARIANI, M.D., MARCO GRECO, M.D., ROBERTO SACCOZZI, M.D., ALBERTO LUINI, M.D., MARISEL AGUILAR, M.D., AND ETTORE MARUBINI, PH.D.

NSABP B-06:

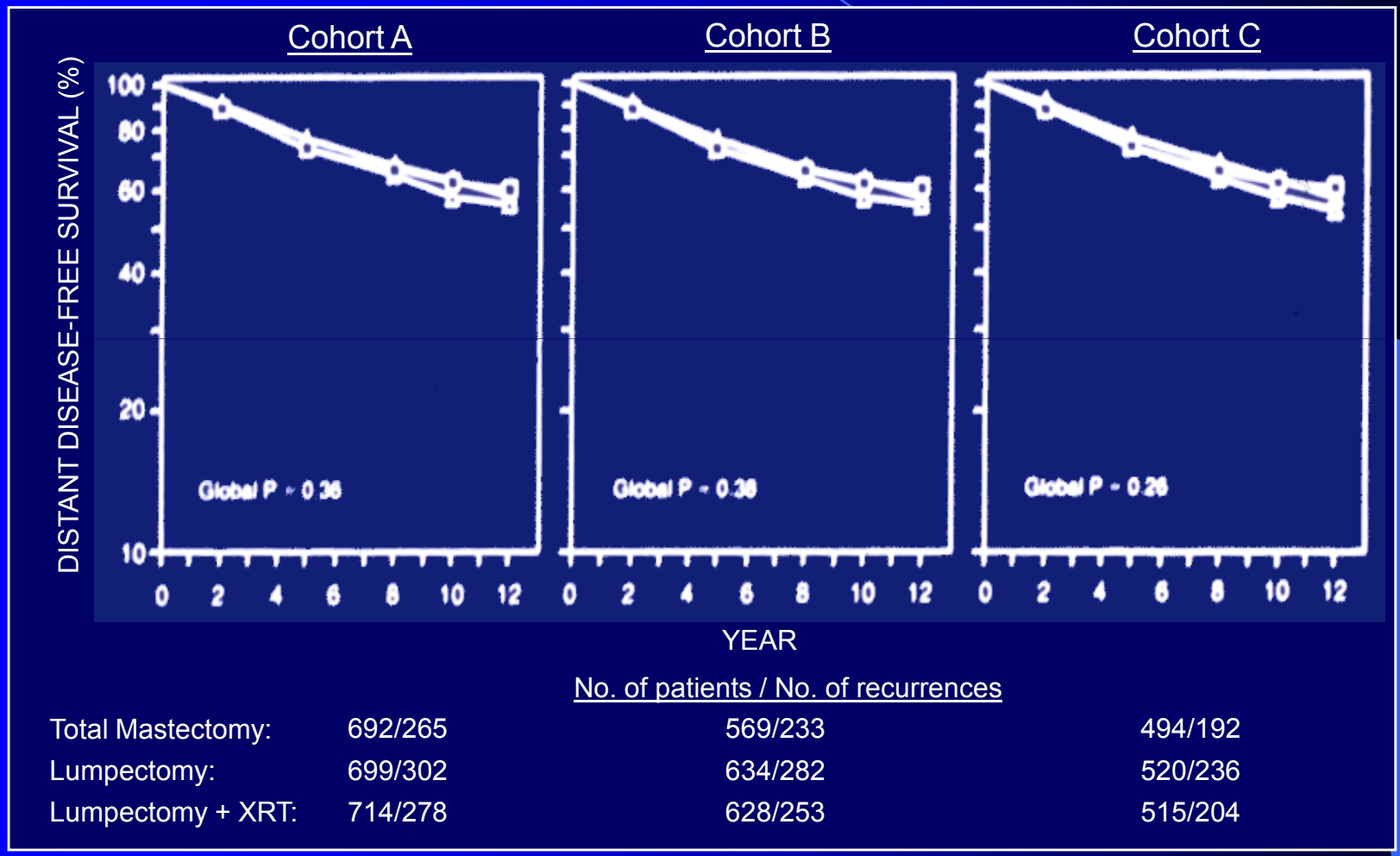
Effect of Lumpectomy v. Mastectomy on Recurrence



	No. of patients / No. of recurrences		
Lumpectomy:	570/210	361/121	209/89
Lumpectomy + XRT:	567/62	375/50	192/12

NSABP B-06:

Effect of Lumpectomy v. Mastectomy on Survival



	No. of patients / No. of recurrences		
Total Mastectomy:	692/265	569/233	494/192
Lumpectomy:	699/302	634/282	520/236
Lumpectomy + XRT:	714/278	628/253	515/204

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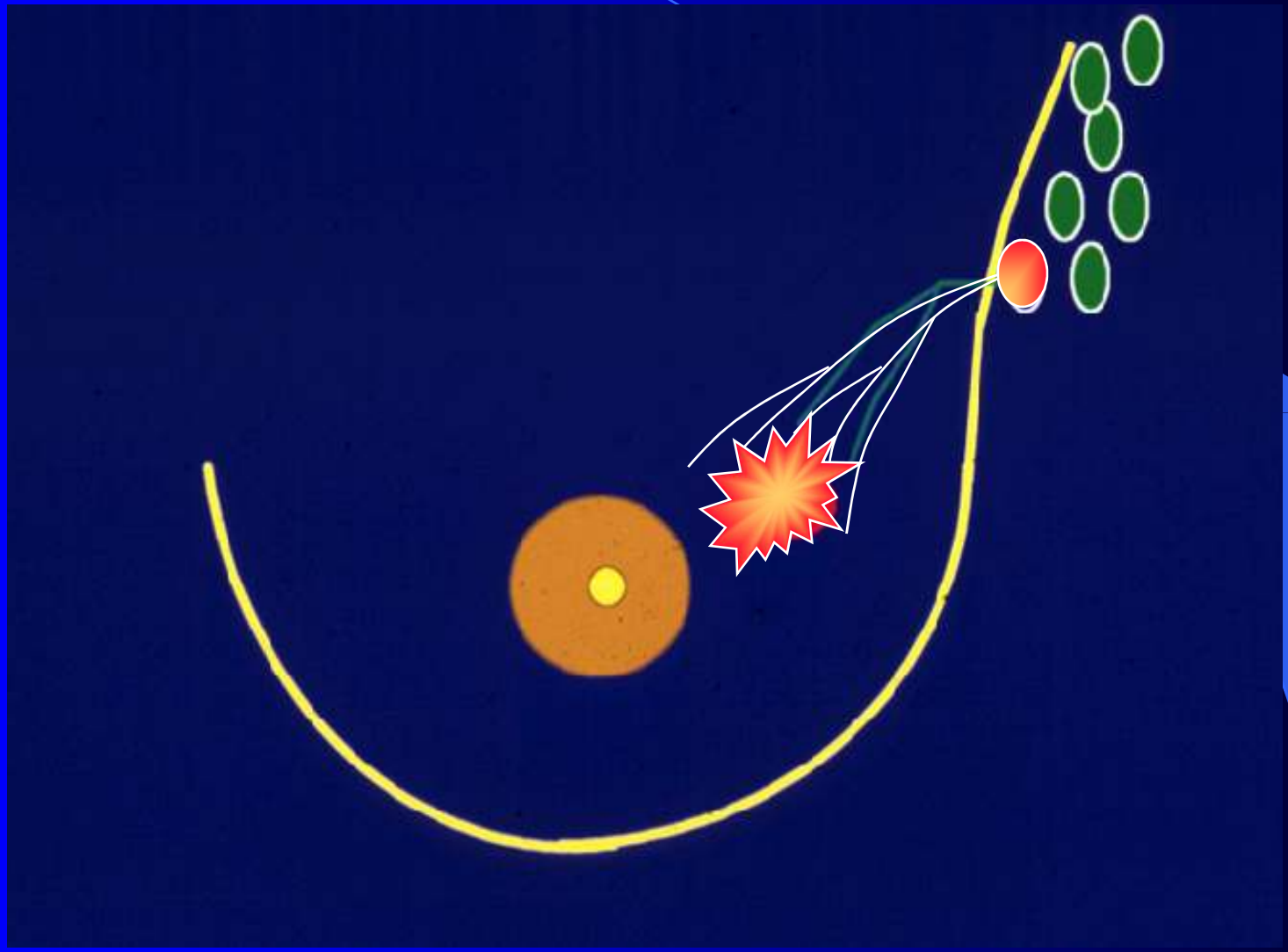
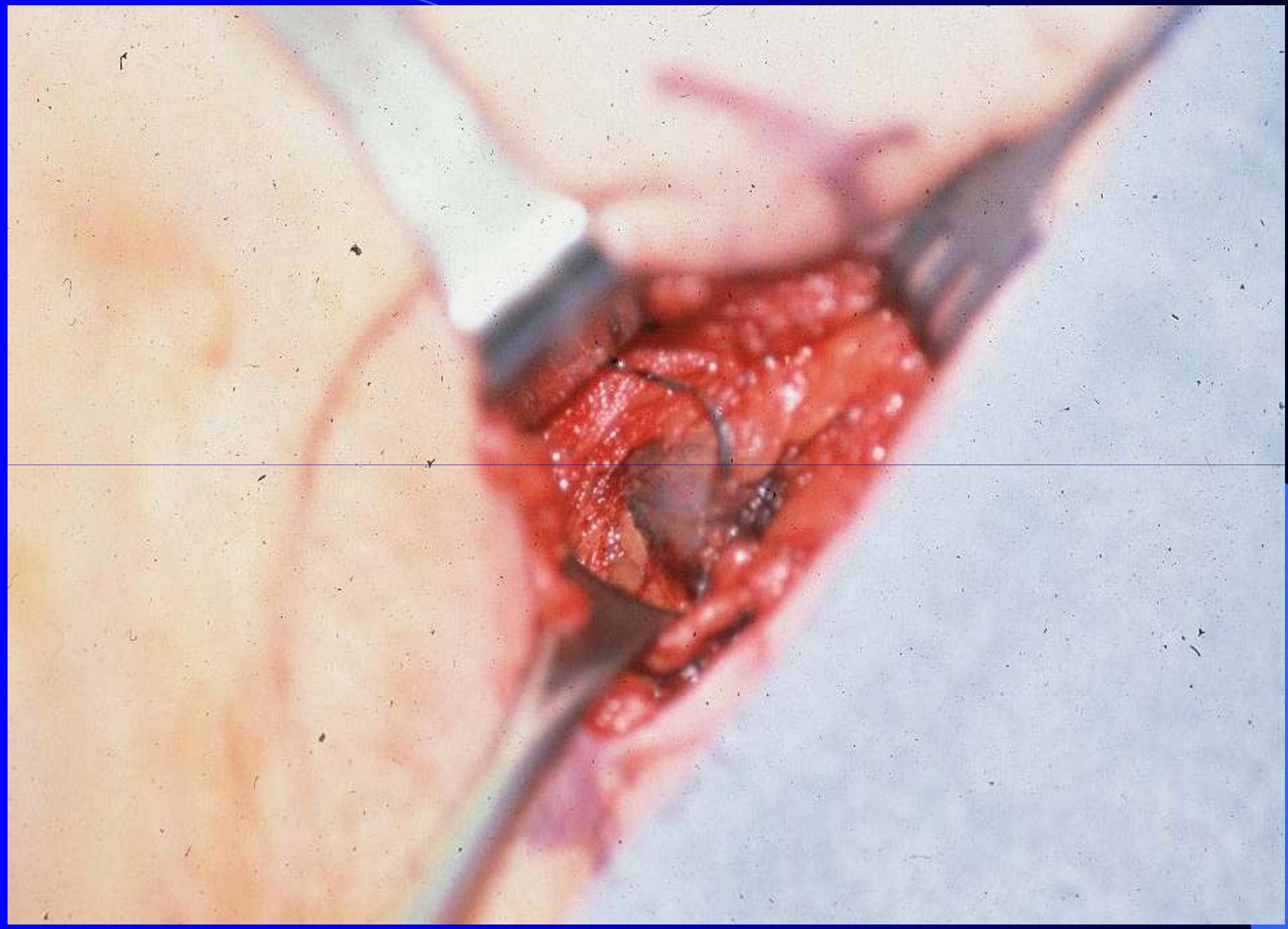
AXILLARY NODE DISSECTION: Complication Rates

- Lymphedema
  - Acute: 40%
  - Chronic: 15-20%
- Paraesthesia: 40%
- Need for a drain: 100%
- Seroma formation: 10%

SENTINEL NODE CONCEPT





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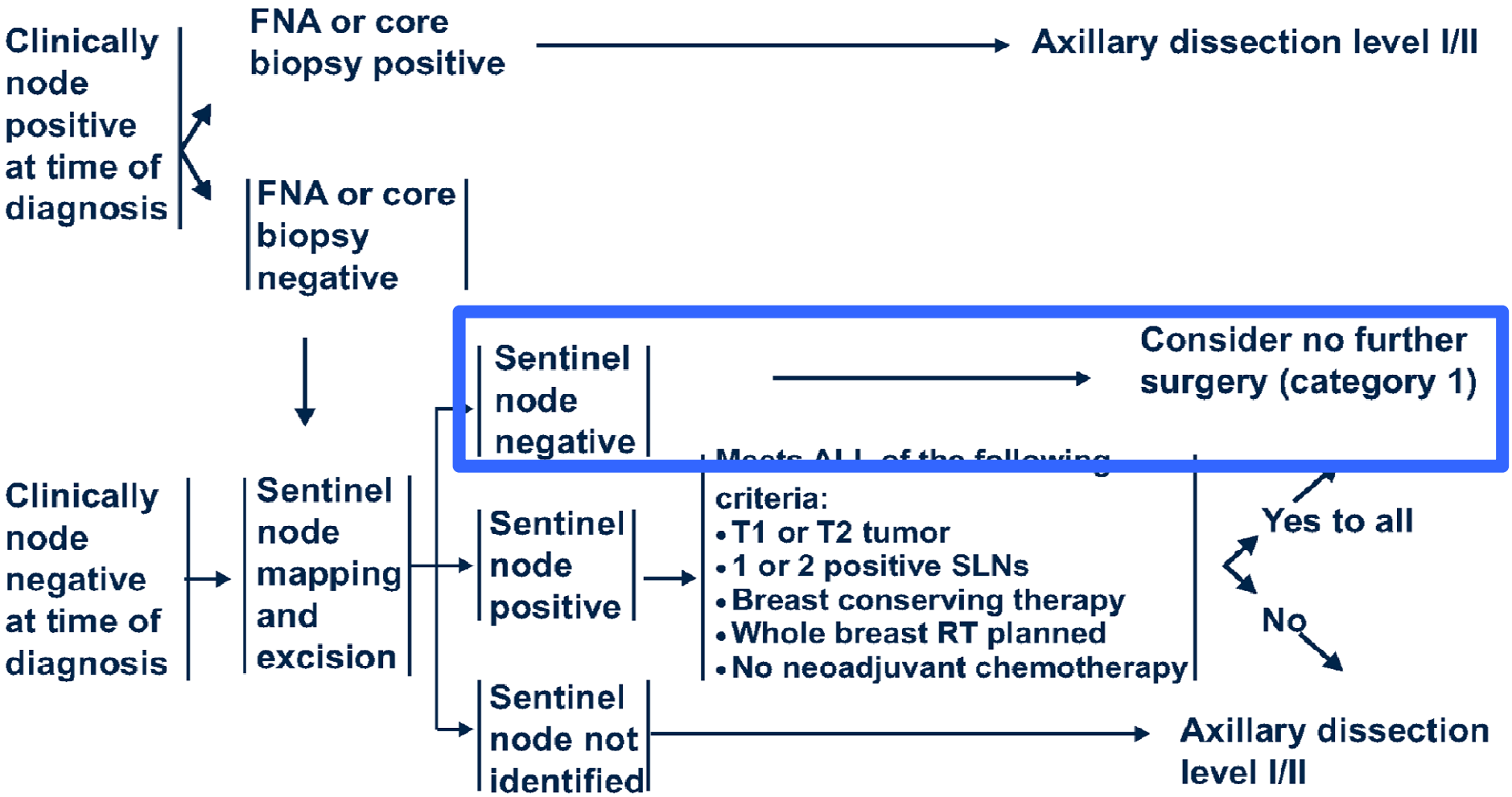
Breast Cancer

SURGICAL AXILLARY STAGING - STAGE I, IIA, IIB and IIIA T3, N1, M0

Clinical Stage I/II



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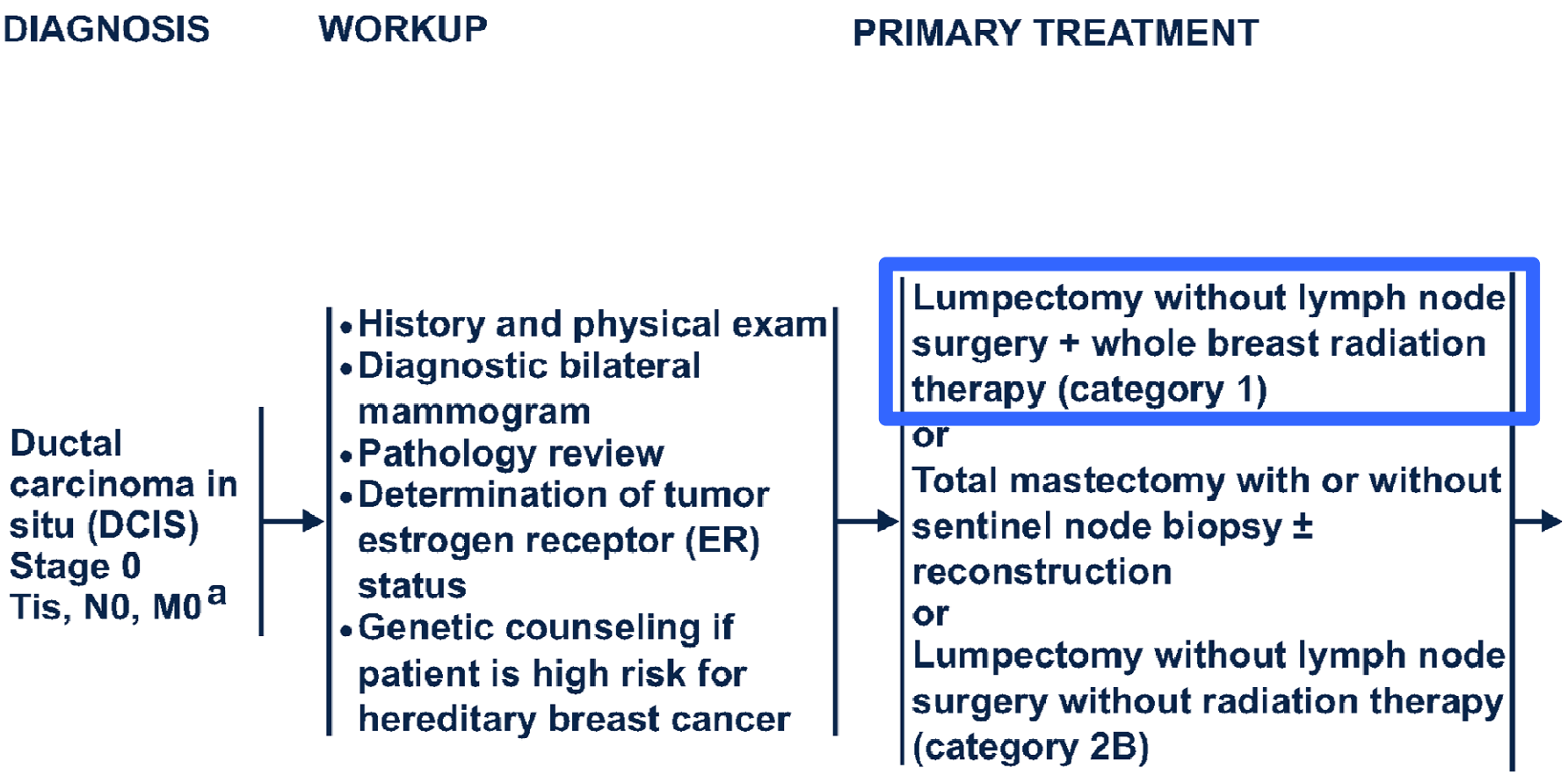
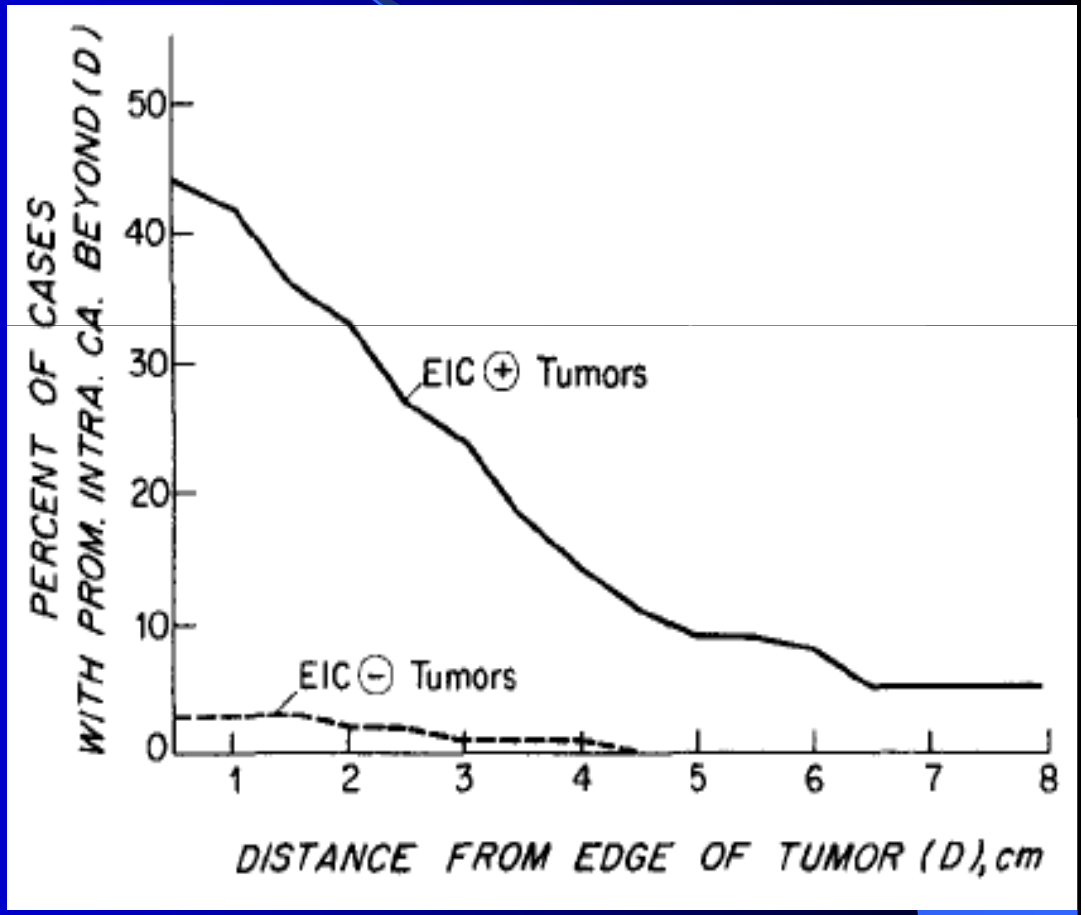


BREAST CONSERVATION
Known Distribution of Disease

- 241 mastectomy specimens dissected
- Correlated pathologic-radiologic mapping
- Residual carcinoma ≥2cm from edge of primary tumor found in
  - 29% without EIC
  - 59% with EIC



Holland et al, JCO 8:113, 1990

BREAST CONSERVATION
Known Distribution of Disease

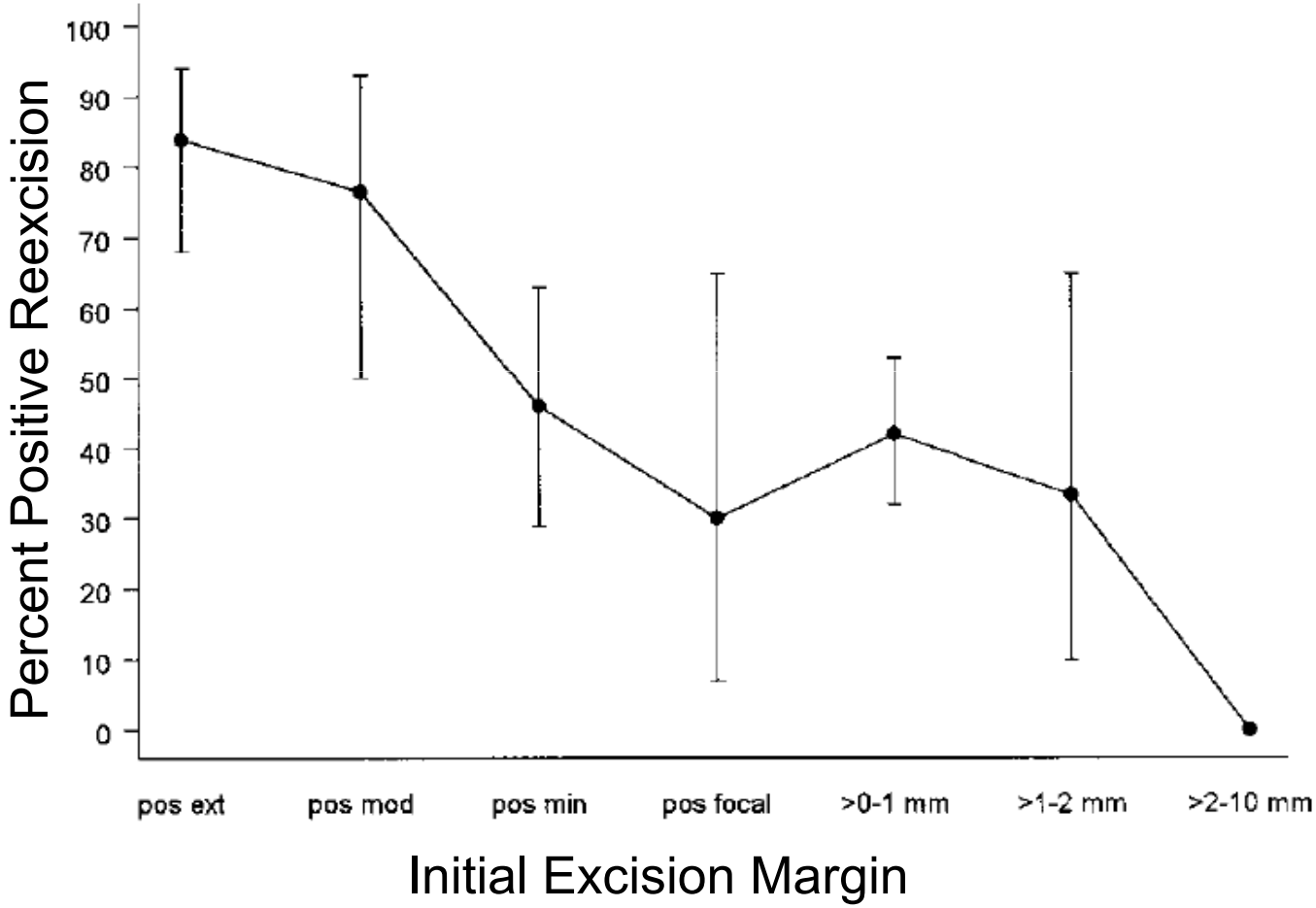
Table 1. Probability of Finding Cancer Remaining in the Breast After Simulated Local Excision Related to the Distance From the Edge of the Primary Tumor Exclusive of LCIS

		Distance From Edge of Primary Tumor				
		> 0.5 cm	> 2 cm	> 4 cm	> 6 cm	> 8 cm
Any residual carcinoma*	EIC +	74%	59%	32%	21%	9%
	EIC −	42%	29%	12%	8%	3%
	P =	.00001	.00004	.0009	.01	.09
Invasive carcinoma	EIC +	36%	20%	12%	2%	2%
	EIC −	19%	12%	7%	4%	1%
	P =	.006	.14	.19	.68	.52
Intralymphatic carcinoma	EIC +	18%	11%	3%	2%	2%
	EIC −	11%	7%	4%	3%	1%
	P =	.19	.43	1.0	.67	1.0
Intraductal carcinoma	EIC +	71%	58%	32%	21%	8%
	EIC −	28%	19%	5%	4%	1%
	P =	< .00001	< .00001	< .00001	.0001	.03

Abbreviation: LCIS, lobular carcinoma in situ.

Holland et al, JCO 8:113, 1990

SURGICAL MARGINS: DCIS – Residual Disease



Neuschatz, Cady et al, Cancer 94:1917, 2002

MARGIN STATUS IN DCIS

Substantial controversy exists regarding the definition of a negative pathologic margin in DCIS. Controversy arises out of the heterogeneity of the disease, difficulties in distinguishing the spectrum of hyperplastic conditions, anatomic considerations of the location of the margin, and inadequate prospective data on prognostic factors in DCIS.

Margins greater than 10 mm are widely accepted as negative (but may be excessive and may lead to a less optimal cosmetic outcome).

Margins less than 1 mm are considered inadequate.

With pathologic margins between 1-10 mm, wider margins are generally associated with lower local recurrence rates. However, close surgical margins (<1 mm) at the fibroglandular boundary of the breast (chest wall or skin) do not mandate surgical re-excision but can be an indication for higher boost dose radiation to the involved lumpectomy site (category 2B).

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MARGIN STATUS IN DCIS

- Margins greater than 10 mm are negative
- Margins less than 1 mm are considered inadequate.
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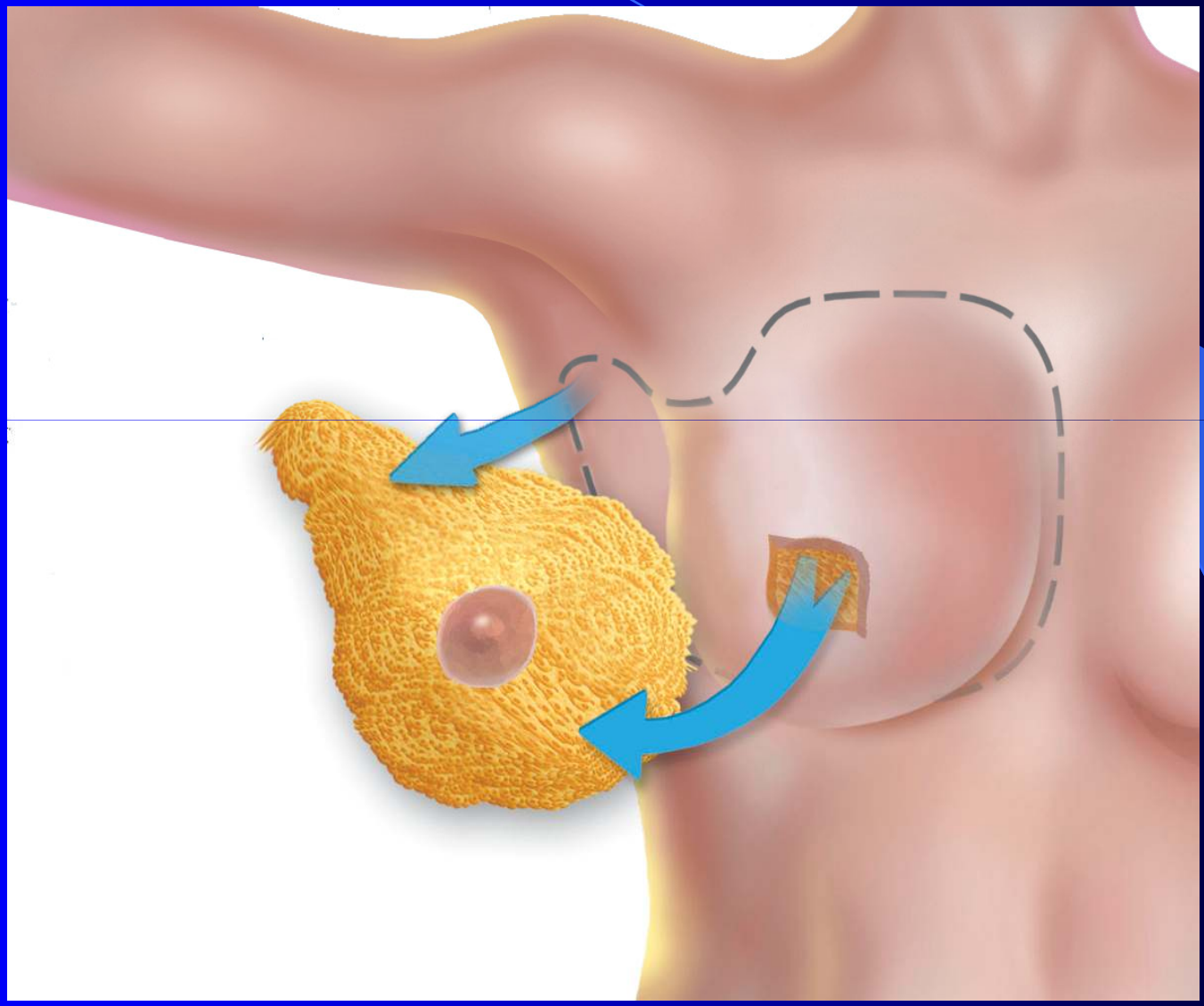
Skin-Sparing Mastectomy



Slide Credit: K. Calhoun

Skin-Sparing Mastectomy

- Introduced in 1991:
  - Toth & Lappert
- Preserve skin envelope
- Reconstruction options:
  - Expander/implant
  - Tissue:
    - DIEP/TRAM
    - Latissimus flap
- Equivalent cancer outcome
- Only 36% satisfied with nipple reconstructions

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy

- Introduced in 2003:
  - Gerber
- Preserves native nipple
- First used for risk reduction (prophylactic) mastectomies
- Nipple recurrence rare
  - Only 1 reported NAC cancer recurrence with prophylactic mastectomy

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy

- Introduced in 2003:
  - Gerber
- Preserves native nipple
- USE WITH CANCER?
  - Nipple involvement
  - Patient selection
  - Local recurrence risk

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Patient Selection

- T0 or T1/T2 (< 4.5 cm)
- Peripheral location
- Distance from NAC:
  - Total NAC: 1-2 cm
  - Nipple center: 4 cm
- Exclusions
  - Paget's
  - Bloody nipple discharge
  - Skin retraction

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Nipple-Areolar Complex (NAC) Involvement

Study	Year	Number Patients	NAC involvement
Sookhan et al.	2008	18	0%
Voltura et al.	2008	36	5.9%
Petit et al.	2009	1001	5.8%
Jensen et al.	2011	99	14%
Filho et al.	2011	156	3.1%
Boneti et al.	2011	293	2.5%
Spear	2011	49	10%

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Tumor to NAC Distance

Study	Year	Number Patients	Average Distance
Sookhan et al.	2008	18	4.8 cm
Voltura et al.	2008	36	4.9 cm
Petit et al.	2009	1001	> 1 cm
Gerber et al.	2009	246	2 cm
Filho et al.	2011	156	>1 cm

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Nipple Margin Analysis

- Mandatory margin measurement:
  - Separate core of nipple base
  - Sharp dissection to avoid trauma
- Intraoperative assessment
  - Frozen section
  - Nipple removed if positive
  - False negative rates 1-3%
- Postoperative assessment
  - No false positives or negatives
  - Requires reoperation if positive

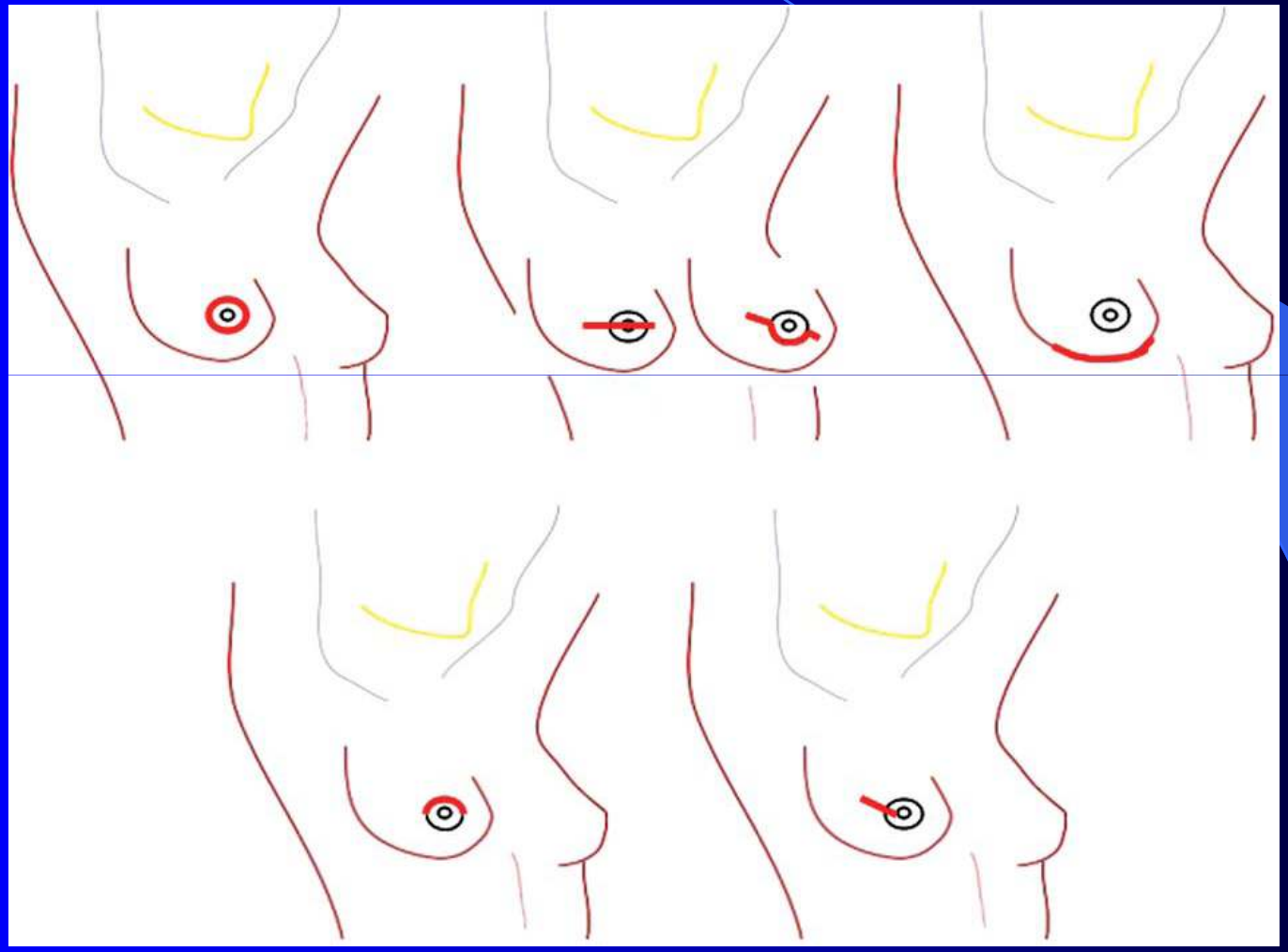
Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Local Recurrence Data

Study and Year	Patients	Total Recurrence	NAC specific
Sookhan et al., 2008	18	0%	0%
Voltura et al., 2008	36	5.9%	0%
Gerber et al., 2009	246	10.4%	2.1% (n=1)
Petit et al., 2009	1001	1.4%	0%
Jensen et al., 2011	99	0%	0%
Filho et al., 2011	156	0%	0%
Boneti et al., 2011	293	4.6%	0%
Spear et al., 2011	49	0%	0%

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy
Surgical Approaches



"Optimizing the Total Skin Sparing Mastectomy", Arch. Surg., 2008, L. Esserman

Nipple-Sparing Mastectomy
Nipple Viability

Study and Year	Patients	Nipple necrosis	Incision
Sookhan et al., 2008	18	10%	Areolar/IMF
Petit et al., 2009	1001	5.5%- partial 3.5%- full	N/S
Jensen et al., 2011	99	6.3%	Lateral
Filho et al., 2011	156	0.2%	Lateral/periareolar
Boneti et al., 2011	293	2.1%	IMF
Spear et al., 2011	49	1.8%	Periareolar with lateral extension

Slide Credit: K. Calhoun

Nipple-Sparing Mastectomy

Nipple Viability

Slide Credit: K. Calhoun

NIPPLE SPARING MASTECTOMY: University of Arkansas, 2011

- Retrospective Review 1998-2010
  - 293 patients underwent 508 procedures:
  - 281 TSSMs (nipple sparing) / 227 SSMs
  - 215 bilat operations / 78 unilat operations
- Comparable complication rates:
  - TSSM 7.1% [20 of 281]
  - SSM 6.2% [14 of 227] (p=0.67)

Boneti, et al. JACS 212:686, 2011

NIPPLE SPARING MASTECTOMY: University of Arkansas, 2011

- Retrospective Review 1998-2010
  - 293 patients underwent 508 procedures:
  - 281 TSSMs (nipple sparing) / 227 SSMs
  - 215 bilat operations / 78 unilat operations
- Comparable locoregional recurrence rates:
  - TSSM 6% [7 of 152]
  - SSM 5.0% [7 of 141] (p = 0.89)

Boneti, et al. JACS 212:686, 2011

NIPPLE SPARING MASTECTOMY: University of Arkansas, 2011

- Retrospective Review 1998-2010
  - 293 patients underwent 508 procedures:
  - 281 TSSMs (nipple sparing) / 227 SSMs
  - 215 bilat operations / 78 unilat operations
- Superior cosmesis with TSSM:
  - TSSM score 9.2 $\pm$ 1.1
  - SSM score 8.3 $\pm$ 1.9 (p=0.04)

Boneti, et al. JACS 212:686, 2011

NIPPLE SPARING MASTECTOMY: University of Arkansas, 2011

- Retrospective Review 1998-2010
  - 293 patients underwent 508 procedures:
  - 281 TSSMs (nipple sparing) / 227 SSMs
  - 215 bilat operations / 78 unilat operations
- AUTHORS' CONCLUSION:
  - TSSM appears to be oncologically safe with superior cosmesis and can be offered to patients with stages I and II breast cancer

Boneti, et al. JACS 212:686, 2011

DUCTAL CARCINOMA IN SITU
Outline

- Diagnosis and extent of disease evaluation
- Breast conservation vs. mastectomy
- Surgical margins and nipple-sparing
- Adjuvant radiation and endocrine therapy

DUCTAL CARCINOMA IN SITU
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- Diagnosis and extent of disease evaluation
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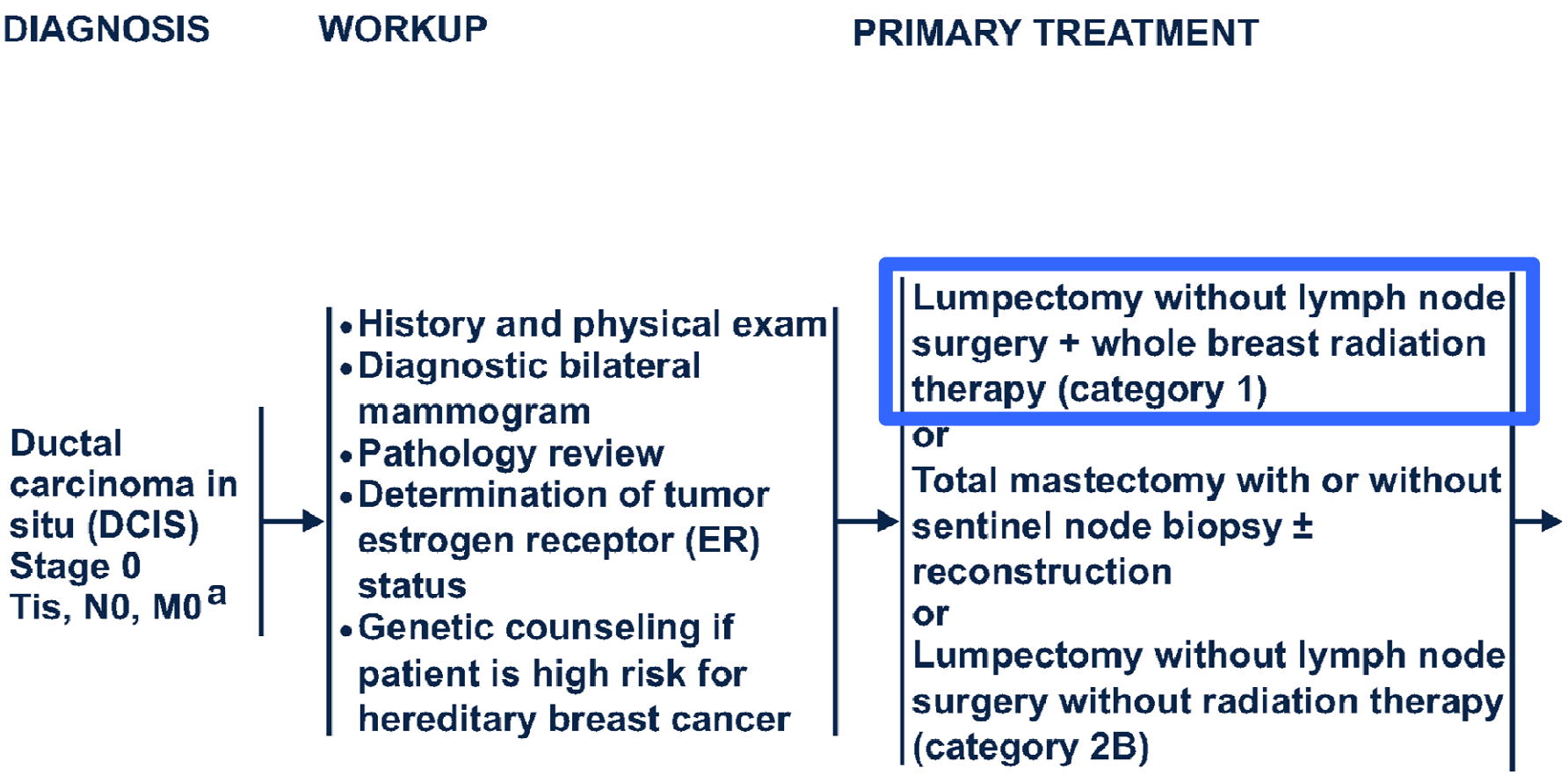
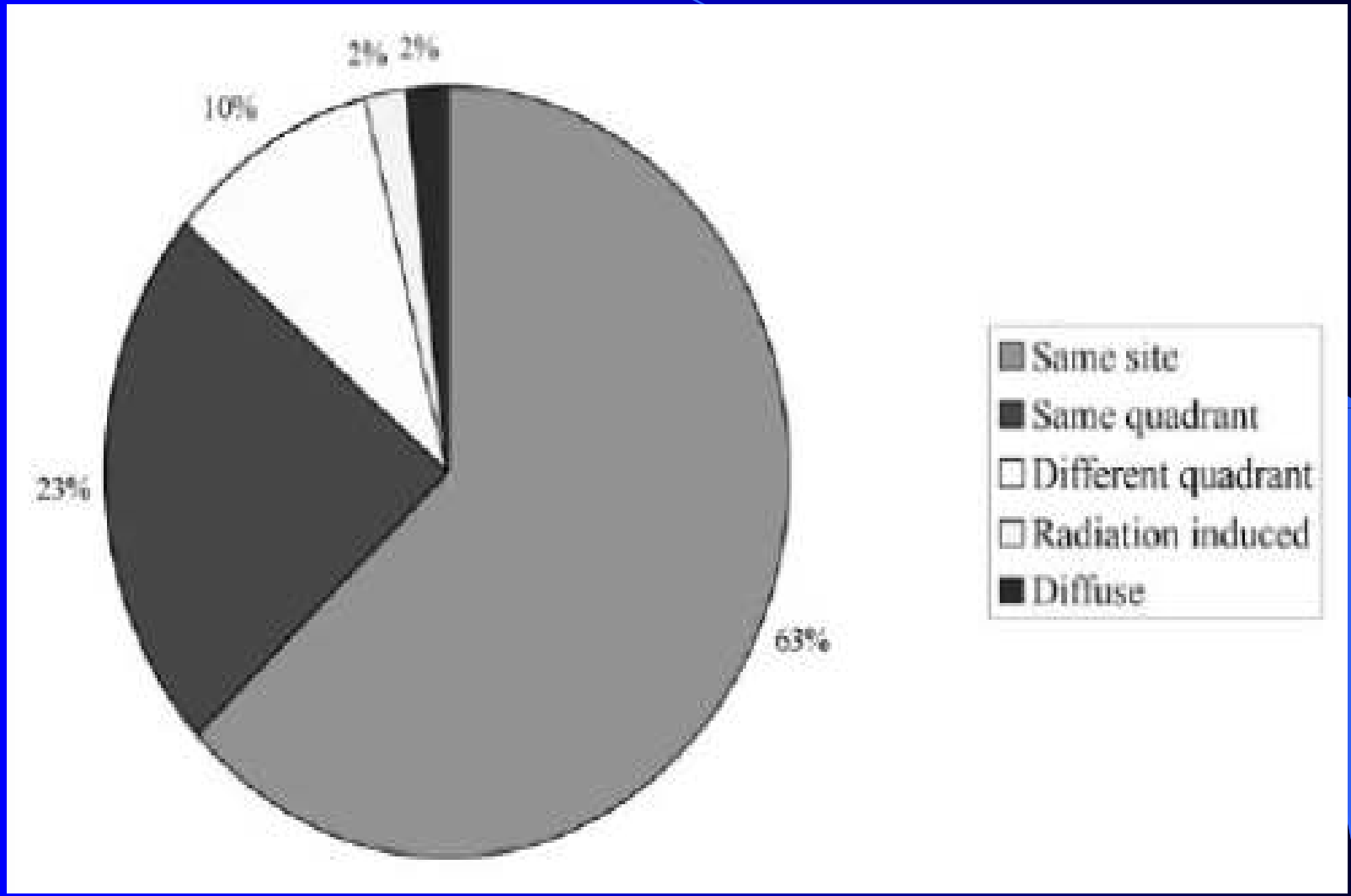
Breast Cancer



BREAST CONSERVATION: Radiation Therapy Concepts

- Surgical lumpectomy: removes tumor bulk
- Radiation therapy after surgery: eradicates residual microscopic cancer
- POSTOPERATIVE RADIATION TREATMENT DECREASES LOCAL RECURRENCE RISK OF BREAST CANCER FROM 30-40% to 10%

LOCAL RECURRENCE WITH BCT



Huston and Simmons, *Amer J Surg* 189:229, 2005

SURGICAL MARGINS: DCIS in NSAPB B-17

Table 3. Distribution by Pathologic Characteristics of DCIS and Hazard Rates of IBT According to Treatment

Characteristic	Lumpectomy			Lumpectomy + irradiation		
	No. at risk N = 274	*No. IBT N = 38*	*Hazard rate/100*	*No. at risk N = 299*	*No. IBT N = 15*	*Hazard rate/100*
Nuclear grade						
Poor	128	22	5.62	147	10	2.09
Good	146	16	3.08	152	5	0.90
Comedo necrosis						
Moderate/marked	123	24	6.48	131	7	1.63
Absent/slight	151	14	2.59	168	8	1.32
Unknown	15	2	5.49	17	1	1.97
Pathologic tumor size						
<1.0 cm	236	32	4.11	263	14	1.54
≥1.0 cm	32	6	4.70	31	1	0.96
Unknown	2	0	0	5	0	0
Lumpectomy margins						
Free	223	25	3.33	249	10	1.18
Uncertain/involved	51	13	8.09	50	5	2.68

Fisher, et al, Cancer 75:1310, 1995

SURGICAL MARGINS: DCIS in NSAPB B-17

Table 4. Adjusted Estimates of the Relative Risk of Second Ipsilateral Breast Tumors Related to Comedo Necrosis and Status of Lumpectomy Margins

Variable	Relative risk	95% confidence interval	*P* value
Comedo necrosis*	1.94	1.12–3.36	0.019
Margin status†	2.33	1.32–4.12	0.004

*Moderate/marked vs. absent/slight, adjusted for margin status and treatment.

† Free vs. uncertain/involved, adjusted for comedo necrosis and treatment.

Fisher, et al, Cancer 75:1310, 1995

SURGICAL MARGINS: DCIS in NSAPB B-17

Table 5. Average Annual Hazard Rate of Second Ipsilateral Breast Tumor Related to Margins of Resection and Comedo Necrosis

		Lumpectomy N = 274			Lumpectomy + irradiation N = 299		
Specimen margins	**Comedo necrosis**	*No. at risk*	*No. of events*	*Avg. annual rate/100*	*No. at risk*	*No. of events*	*Avg. Annual rate/100*
Free	Absent/slight	125	9	1.97	144	6	1.18
Free	Moderate/marked	98	16	5.44	105	4	1.18
Uncertain/involved	Absent/slight	26	5	5.95	24	2	2.10
Uncertain/involved	Moderate/marked	25	8	10.46	26	3	3.28

"Most clinical investigators now agree that local recurrences after lumpectomy for DCIS most likely reflect residual disease and further that the acceptance of minimally clear margins is inadequate for local control."

David Page and Michael Lagios

Fisher, et al, Cancer 75:1310, 1995

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DIAGNOSIS	WORKUP	PRIMARY TREATMENT
Ductal carcinoma in situ (DCIS) Stage 0 Tis, N0, M0 [a]	• History and physical exam • Diagnostic bilateral mammogram • Pathology review • Determination of tumor estrogen receptor (ER) status • Genetic counseling if patient is high risk for hereditary breast cancer	Lumpectomy without lymph node surgery + whole breast radiation therapy (category 1) or Total mastectomy with or without sentinel node biopsy ± reconstruction or Lumpectomy without lymph node surgery without radiation therapy (category 2B)

BREAST CONSERVATION: Van Nuys Scale and Margins

The New England
Journal of Medicine

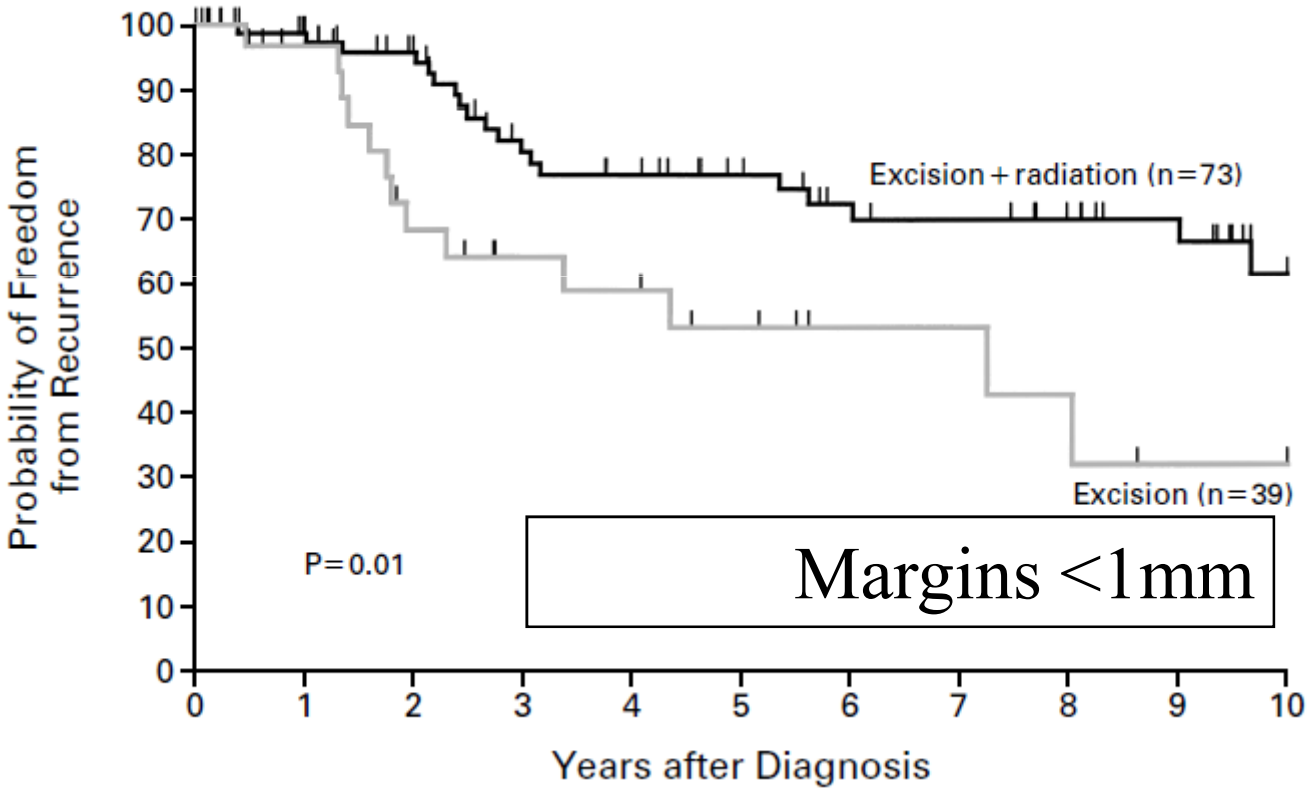
VOLUME 340 MAY 13, 1999 NUMBER 19

THE INFLUENCE OF MARGIN WIDTH ON LOCAL CONTROL OF DUCTAL CARCINOMA IN SITU OF THE BREAST

MELVIN J. SILVERSTEIN, M.D., MICHAEL D. LAGIOS, M.D., SUSAN GROSHEN, PH.D., JAMES R. WAISMAN, M.D., BERNARD S. LEWINSKY, M.D., SILVANA MARTINO, D.O., PARVIS GAMAGAMI, M.D., AND WILLIAM J. COLBURN, M.D.

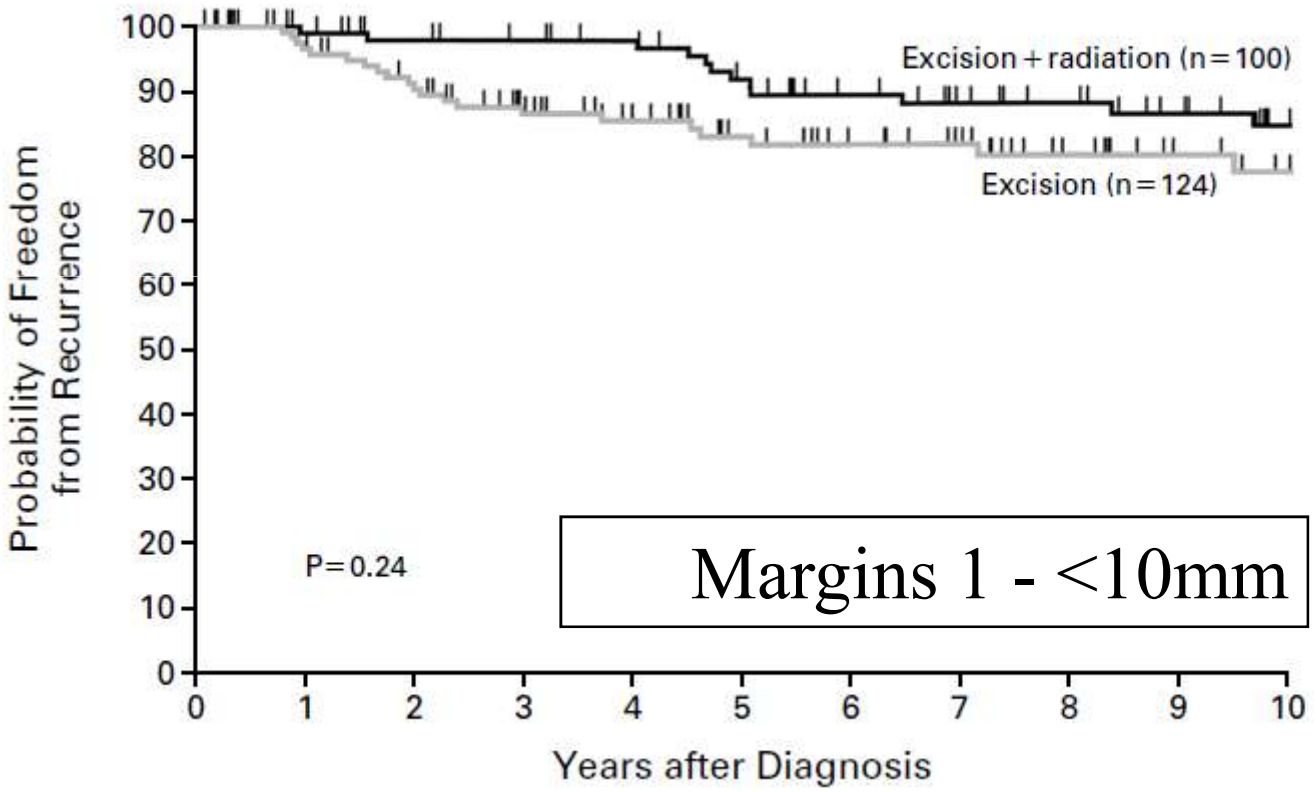
Silverstein, et al, NEJM 340:1455, 1999

BREAST CONSERVATION: Van Nuys Scale and Margins



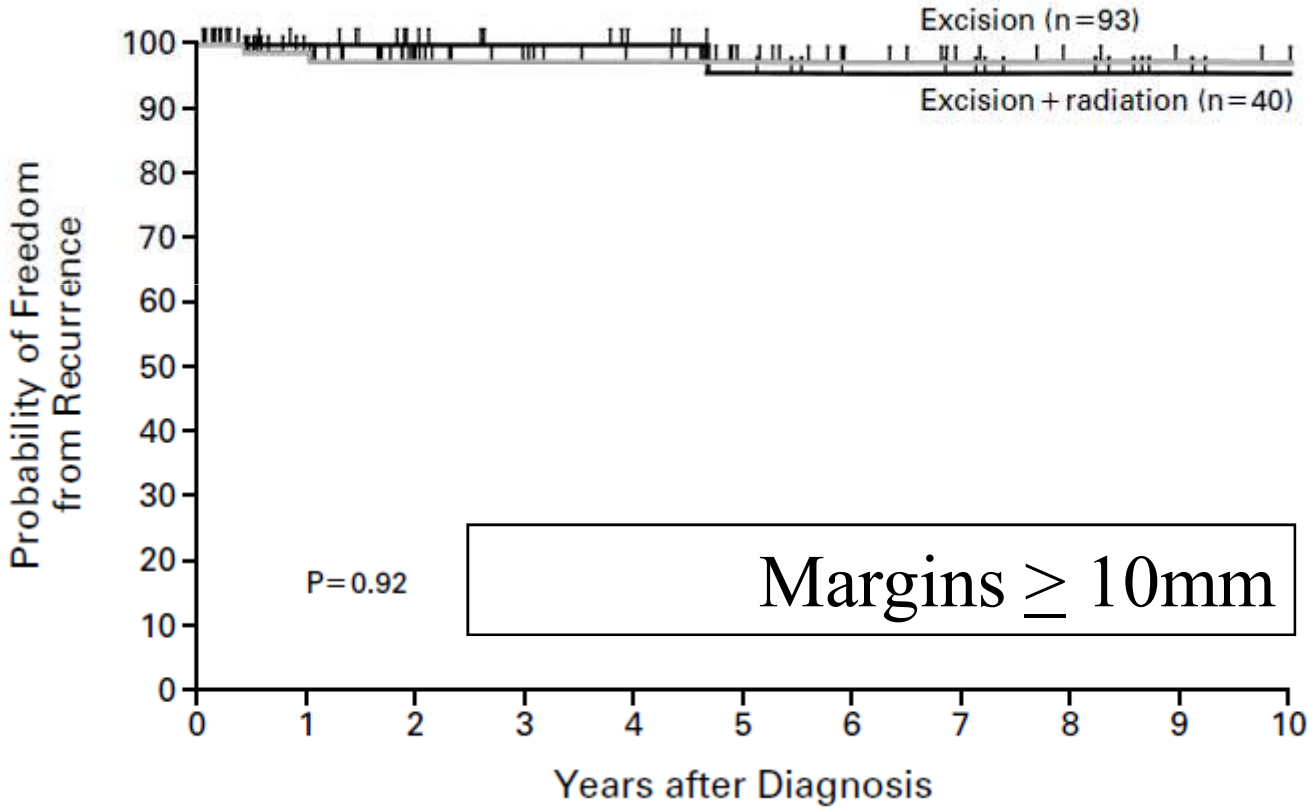
Silverstein, et al, NEJM 340:1455, 1999

BREAST CONSERVATION: Van Nuys Scale and Margins



Silverstein, et al, NEJM 340:1455, 1999

BREAST CONSERVATION: Van Nuys Scale and Margins



Silverstein, et al, NEJM 340:1455, 1999

SURGICAL MARGINS: DCIS - Lumpectomy Alone

Univariate analysis of predictors of local recurrence of DCIS

	Total N/no. of events	Relative hazard ratio (95% confidence interval)	*P* value	Probability of remaining free of local recurrence at 5 years (±SE)	Probability of remaining free of local recurrence at 8 years (±SE)
Margin			<.001		
0 (transected)	32/15	1.00		48% ± 11%	39% ± 12%
.1–.9	53/18	.61 (.31–1.20)		63% ± 8%	58% ± 9%
1.0–1.9	20/7	.58 (.23–1.42)		73% ± 12%	49% ± 16%
2.0–2.9	82/20	.21 (.10–.42)		81% ± 5%	78% ± 5%
3.0–5.9	39/8	.35 (.15–.83)		64% ± 11%	64% ± 11%
6.0–9.9	22/2	.20 (.05–.87)		91% ± 9%	61% ± 25%
≥10	197/9	.07 (.03–.15)		93% ± 3%	91% ± 3%

"If wide margins are obtained, regardless of other factors, the probability of local recurrence remains small. With greater than 10-mm margins, the probability of remaining recurrence free at 8 years is greater than 90% without postoperative radiotherapy."

MacDonald, et al, Am J Surg 190:521, 2005

DUCTAL CARCINOMA IN SITU
Lumpectomy without XRT

- Prosective, single arm trial:
  - DCIS of predominant grade 1 or 2
  - Mammographic extent of 2.5 cm
  - Final margins 1 cm or re-excision without residual DCIS
- Trial closed July 2002 at 158 patients:
  - Thirteen pts local recurrence at 7 to 63 months
  - Ipsilateral local recurrence 2.4% per patient-year
  - 5-year recurrence rate 12% (10/13 in same quadrant)

Wong (Joint Centers), et al., JCO 24:1031,2006

DUCTAL CARCINOMA IN SITU
Multidisciplinary Selection

- 10 yr single institution experience
  - Group 1: ≥5-mm margin and received radiation
  - Group 2: ≥10-mm margin and received no radiation
- 152 patients (153 cancers); median F/U 8.2 years
  - Overall, 6 recurrences (3.92%);
  - 1 of 71 recurred in group 1 (1.40%)
  - 5 of 82 recurred in group 2 (6.01%).
- CONCLUSION: A subgroup of DCIS patients can be identified in which radiation can be safely avoided.

West et al., Am J Surg 194:532,2007

CANCER PREVENTION METHODS

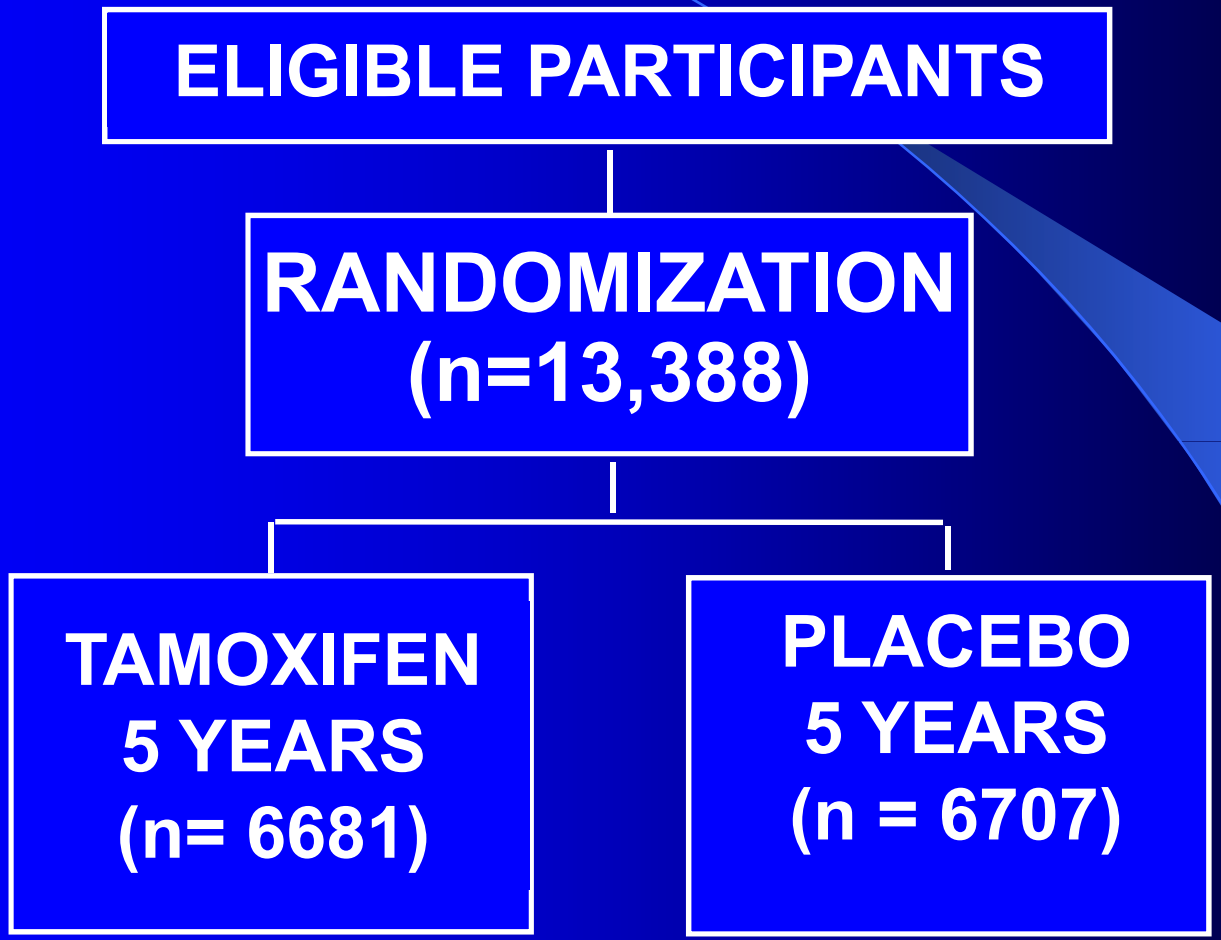
Prophylactic surgery

Chemoprevention

Behavior modification

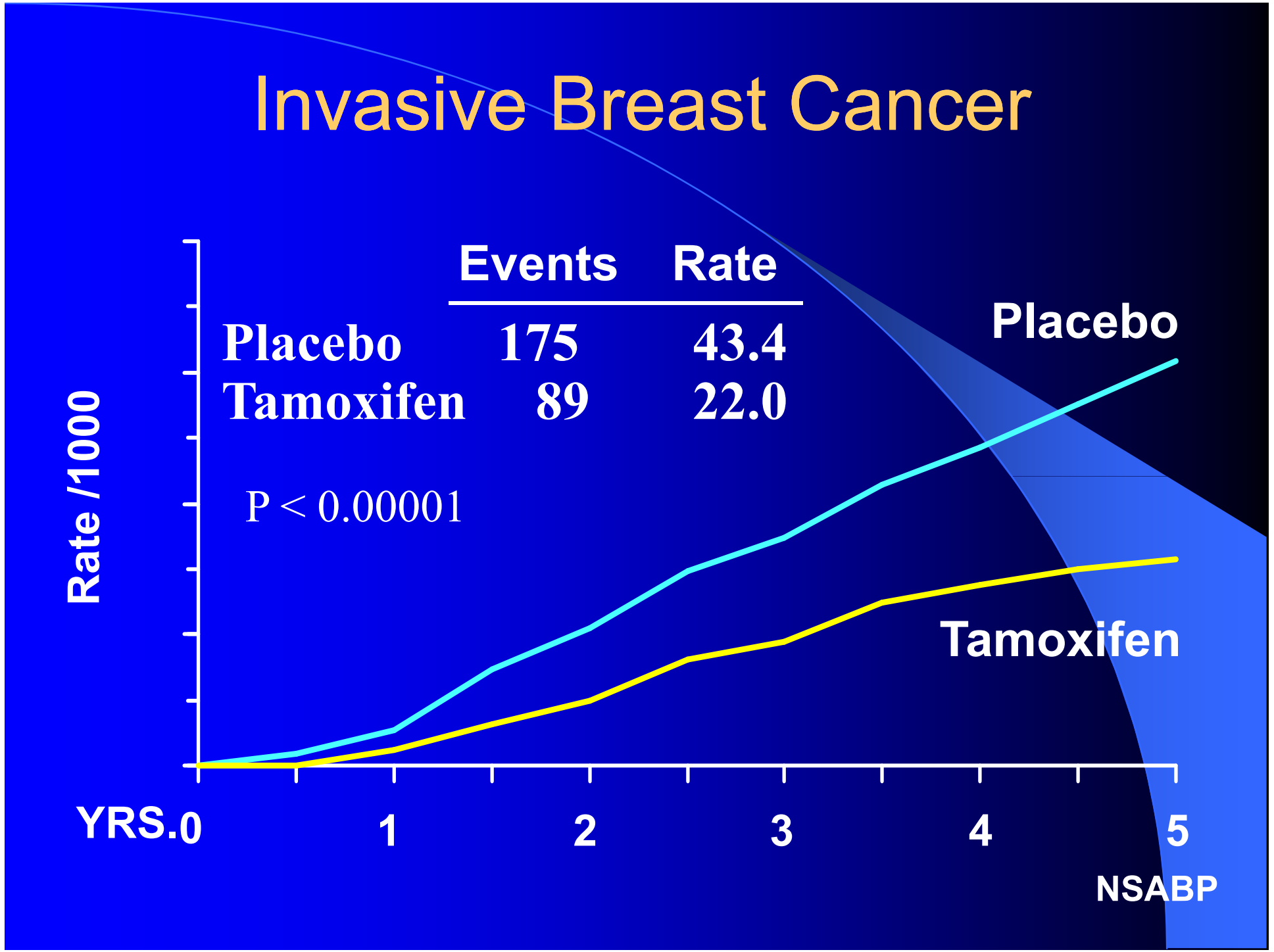
FUTURE: Gene therapy?

BCPT SCHEMA

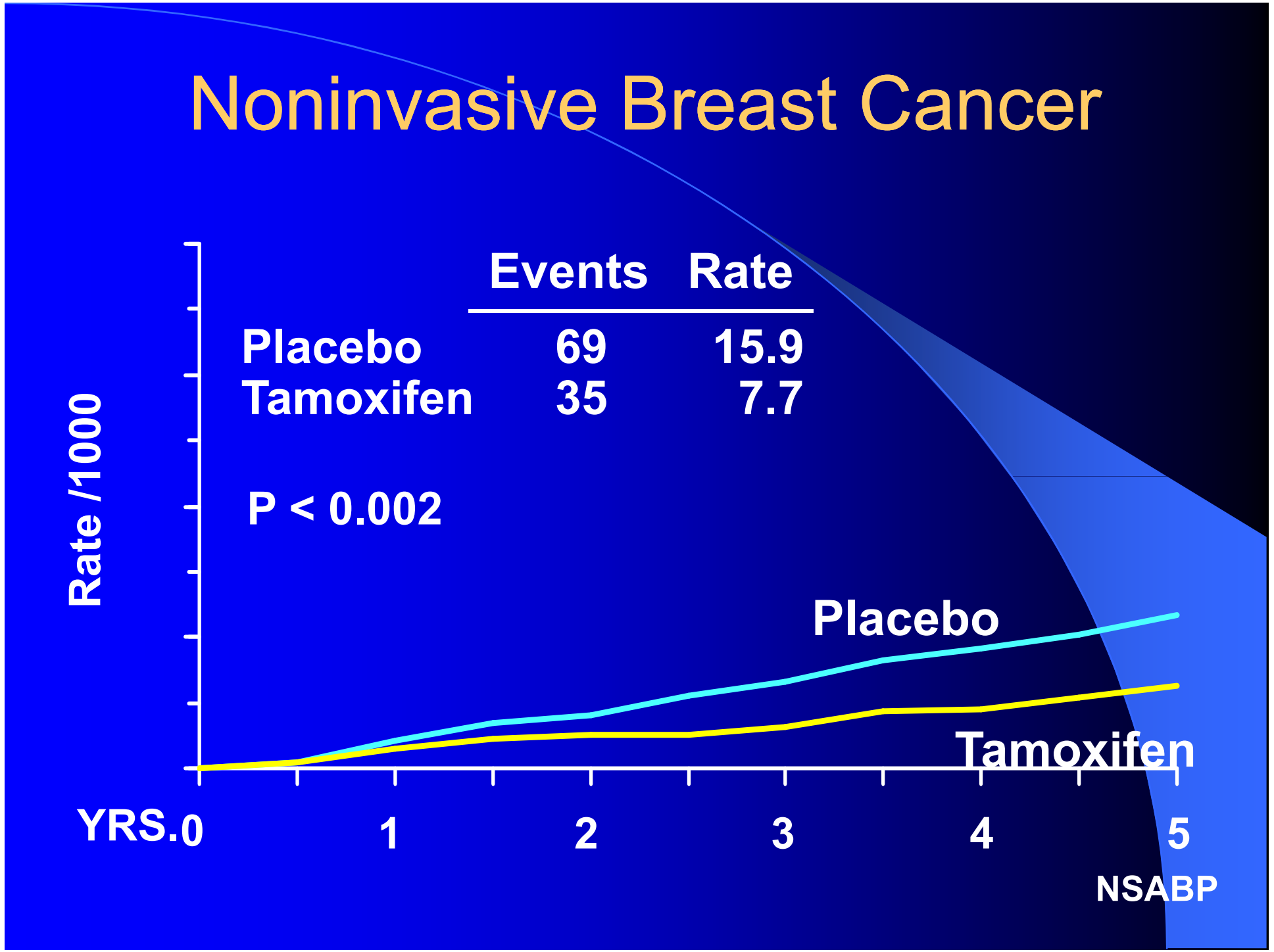


NSABP

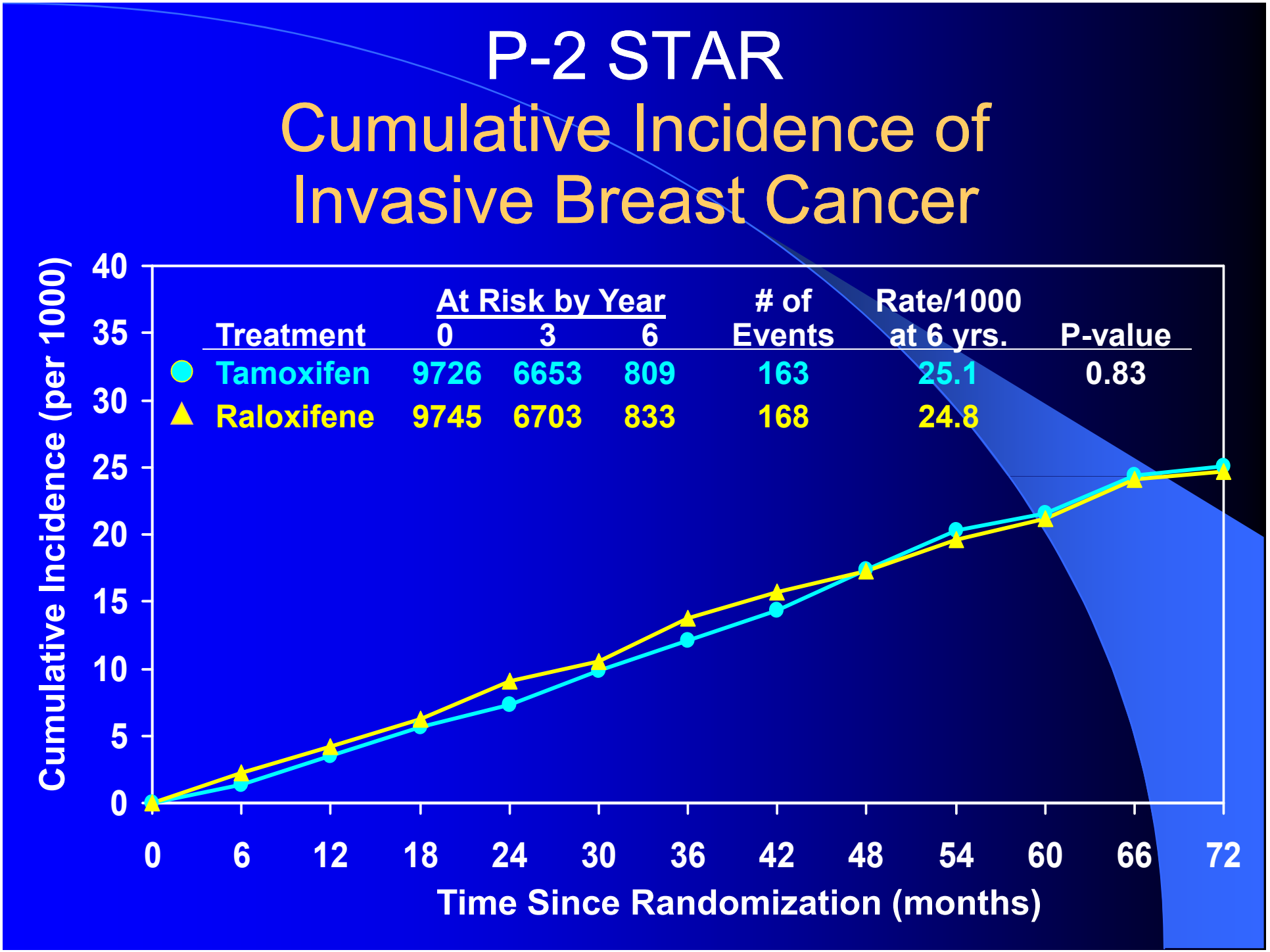
Invasive Breast Cancer



Noninvasive Breast Cancer

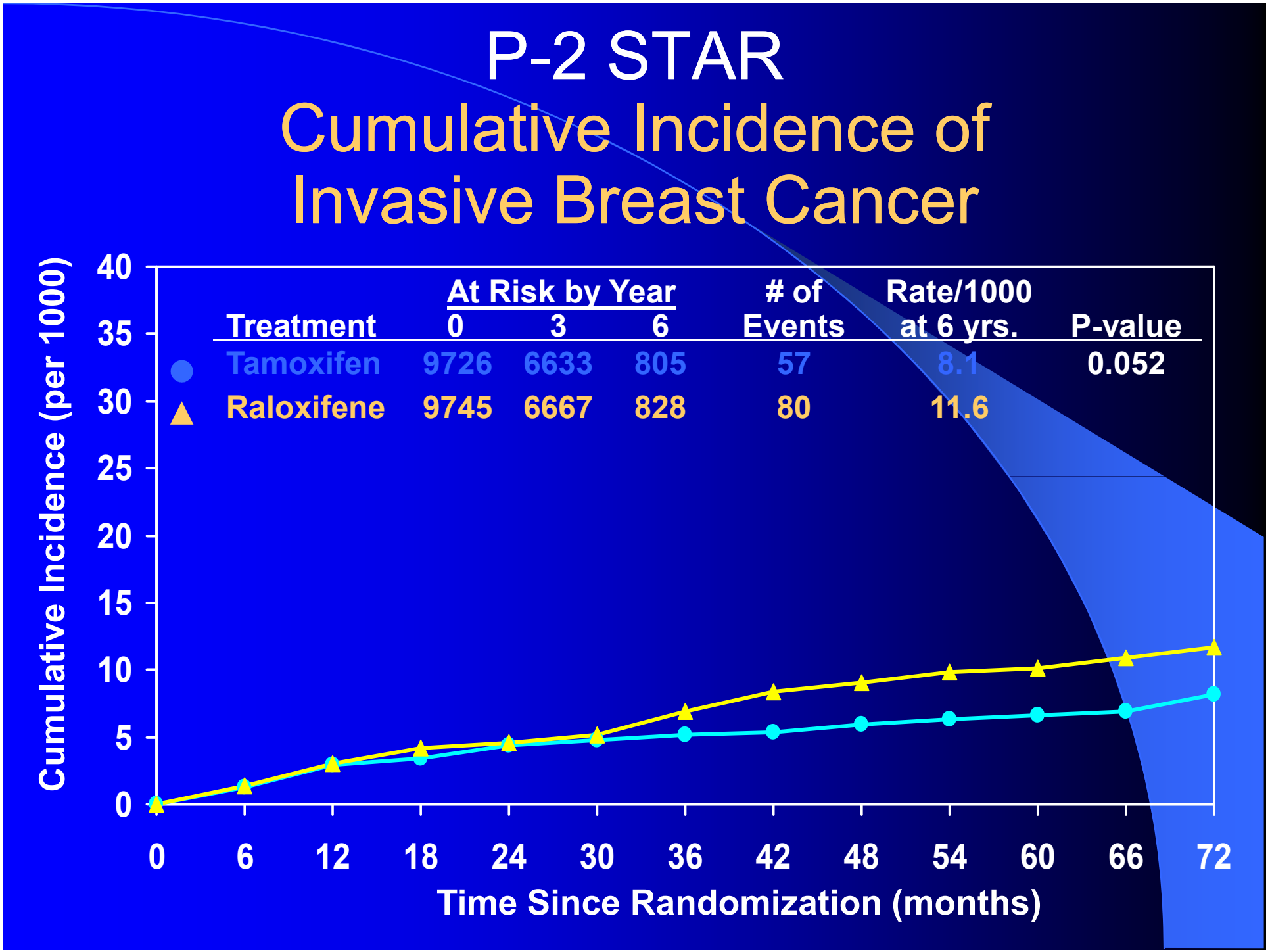


P-2 STAR
Cumulative Incidence of Invasive Breast Cancer

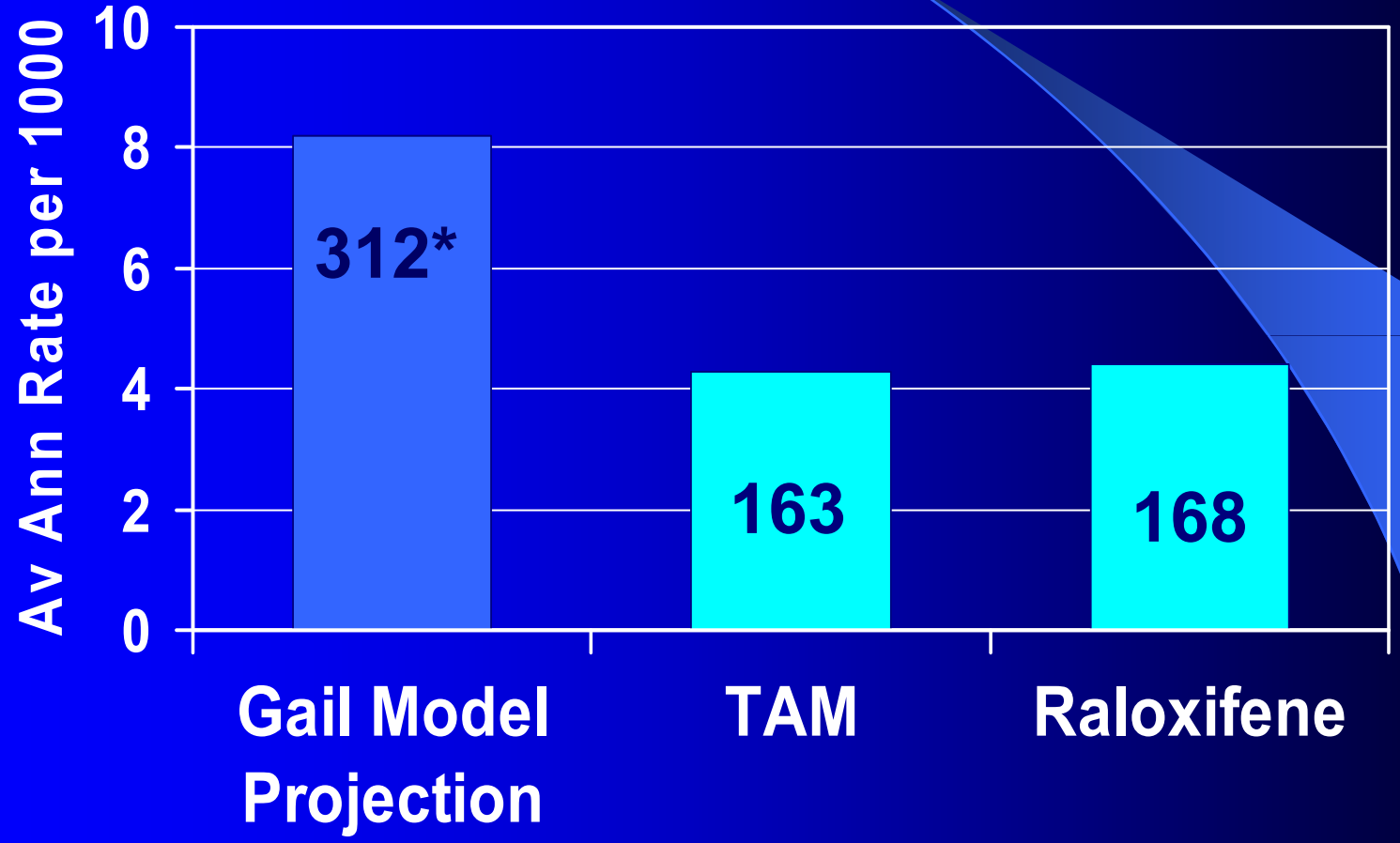


Treatment	At Risk by Year 0	3	6	# of Events	Rate/1000 at 6 yrs.	P-value
Tamoxifen	9726	6653	809	163	25.1	0.83
Raloxifene	9745	6703	833	168	24.8	

P-2 STAR
Cumulative Incidence of Invasive Breast Cancer

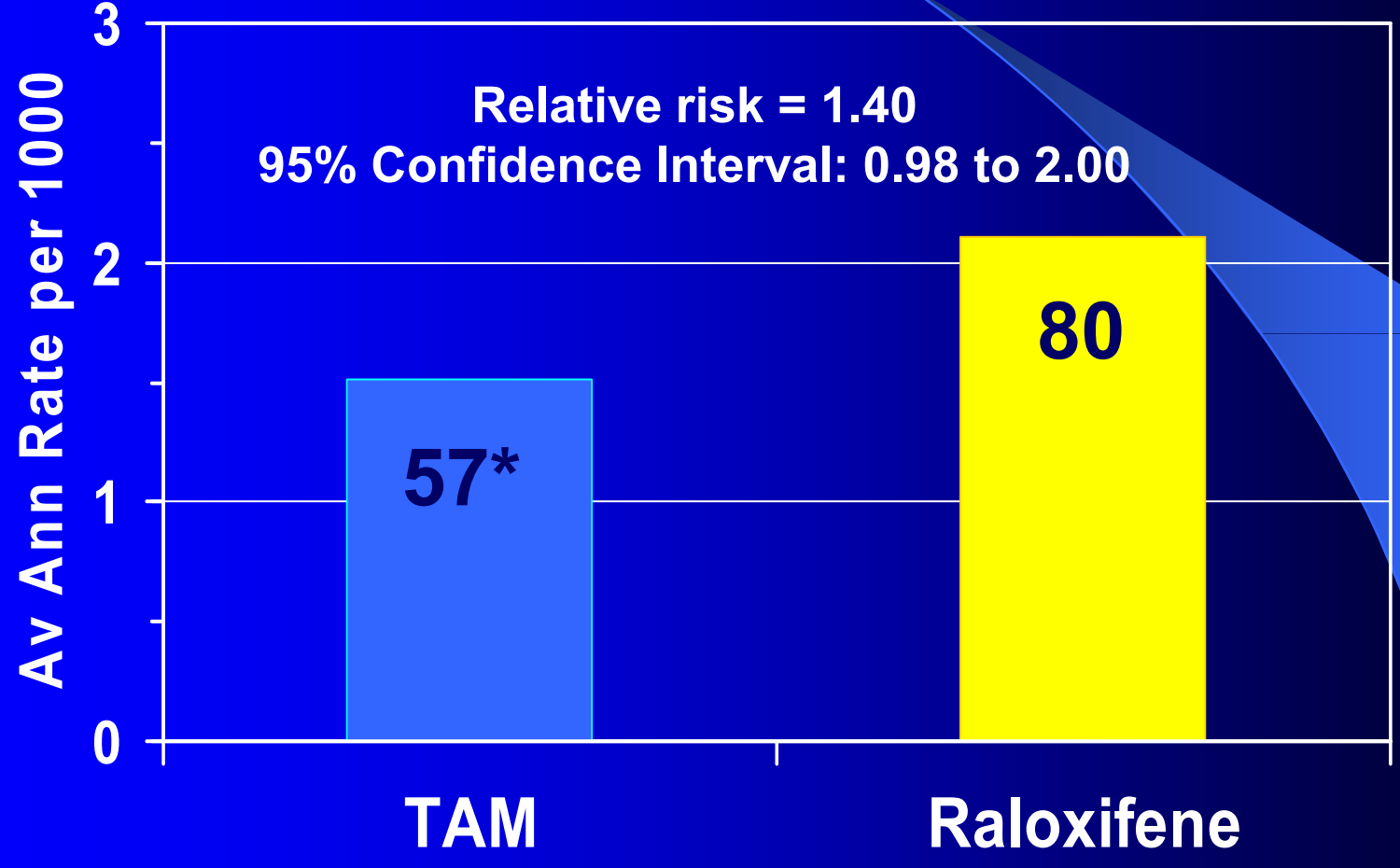


P-2 STAR
Average Annual Rate and Number of Invasive Breast Cancers



* # of events

P-2 STAR
Average Annual Rate And Number Of Non-invasive (*In Situ*) Cancers



* # of events

NCCN Guidelines Version 1.2012
Breast Cancer

DCIS POSTSURGICAL TREATMENT

Risk reduction therapy for ipsilateral breast following breast conserving surgery:

Consider tamoxifen for 5 years for:
- **Patients treated with breast-conserving therapy (lumpectomy) and radiation therapy (category 1), especially for those with ER-positive DCIS. The benefit of tamoxifen for ER-negative DCIS is uncertain**
- **Patients treated with excision alone**

Risk reduction therapy for contralateral breast:
- **Counseling regarding risk reduction**

See also NCCN Breast Cancer Risk Reduction Guidelines

SURVEILLANCE/FOLLOW-UP

- **Interval history and physical exam every 6-12 mo for 5 y, then annually**
- **Mammogram every 12 mo (and 6-12 mo postradiation therapy if breast conserved [category 2B])**
- **If treated with tamoxifen, monitor per NCCN Breast Cancer Risk Reduction Guidelines**

DUCTAL CARCINOMA IN SITU Summary 1

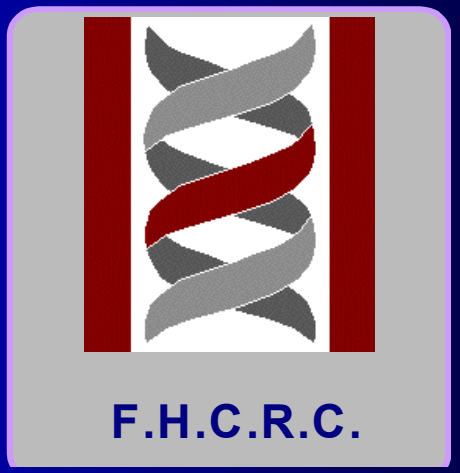
- Minimally invasive perutaneous sampling should be used initially to make DCIS diagnosis.
- The extent of disease is the primary determinate of candidacy for breast conservation surgery.
- Standard imaging (mammo/US) should be used for EOD work-up; the role of MRI is controversial.
- SLN biopsy should be considered with mastectomy, in the event occult invasive cancer is found.
- The role of nipple-sparing mastectomy for DCIS is controversial, because patient selection is unclear.

DUCTAL CARCINOMA IN SITU Summary 2

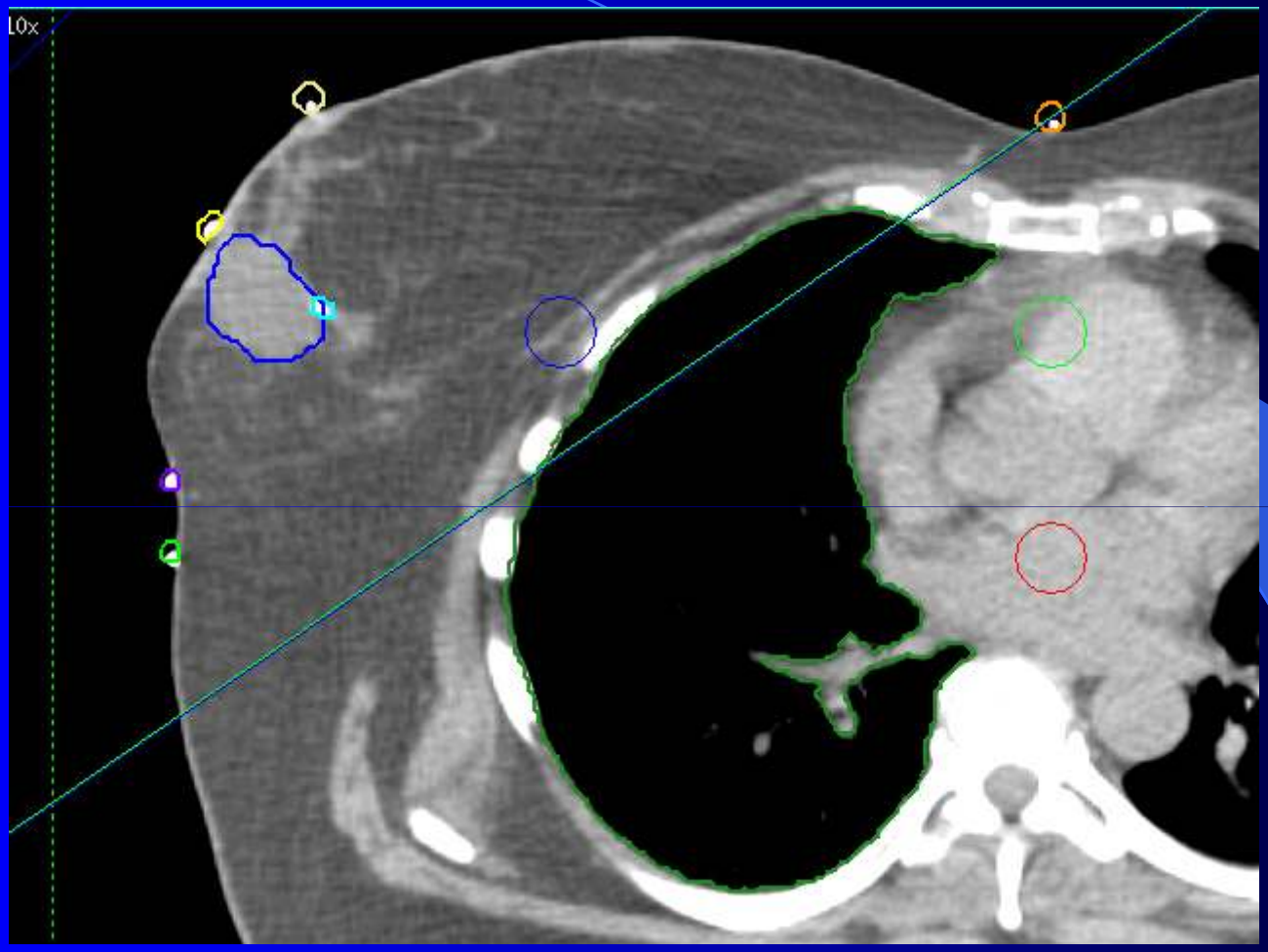
- Surgical margins for DCIS are a concern because of known residual disease and local recurrence risk.
- Oncoplastic techniques can assist in the resection of segmentally distributed cancers.
- Radiation therapy helps compensate for narrow (but not positive) surgical margins.
- Patient selection for lumpectomy alone (no XRT) is challenging and significant disagreements abound.
- Endocrine therapy reduces risk recurrence of ER+ DCIS, and may help patients who forego XRT.


SEATTLE
CANCER CARE
ALLIANCE

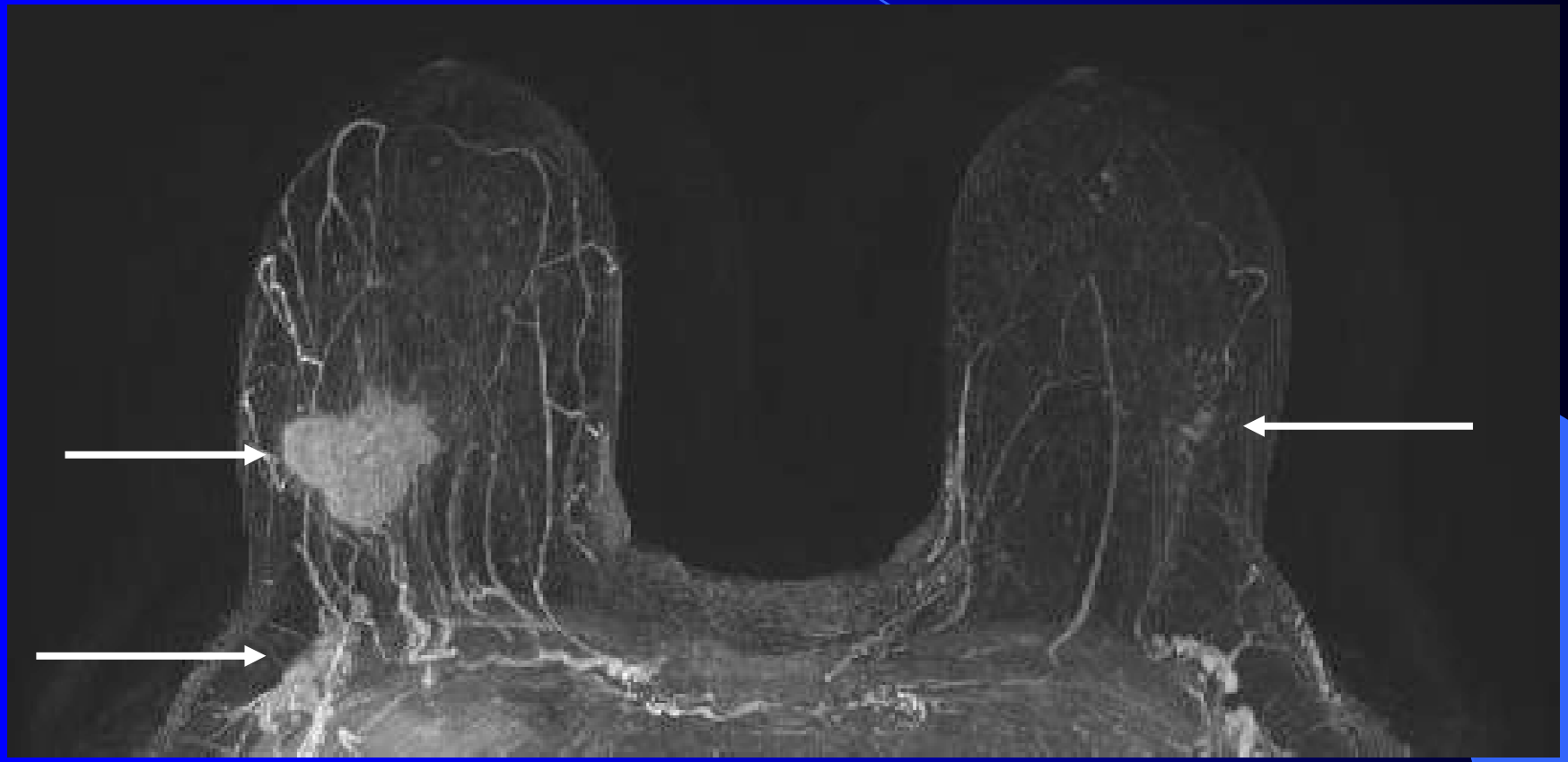

U.W.S.O.M.


F.H.C.R.C.

BREAST CONSERVING RADIATION THERAPY

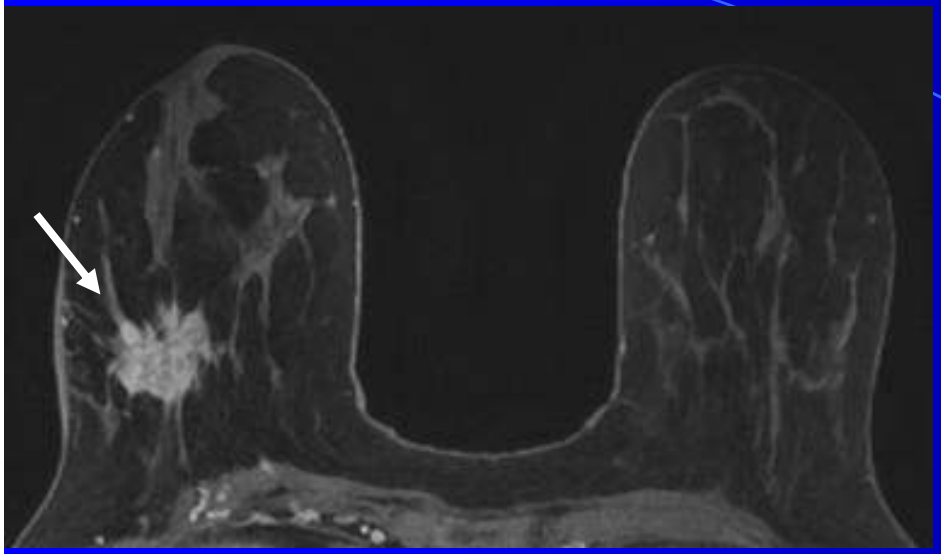


Skin bridge at seroma cavity is too narrow (2mm) for accelerated partial breast irradiation (APBI)

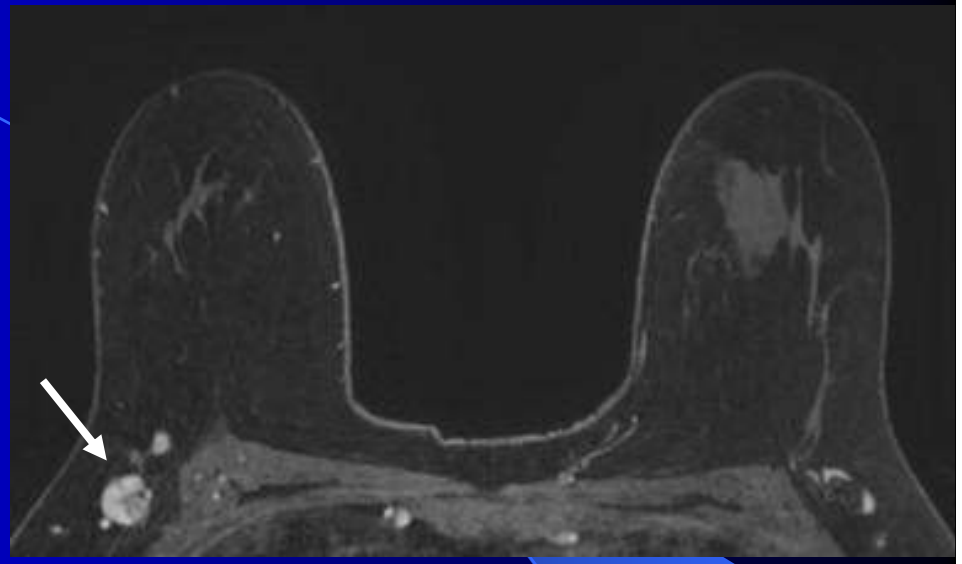


BASELINE MRI

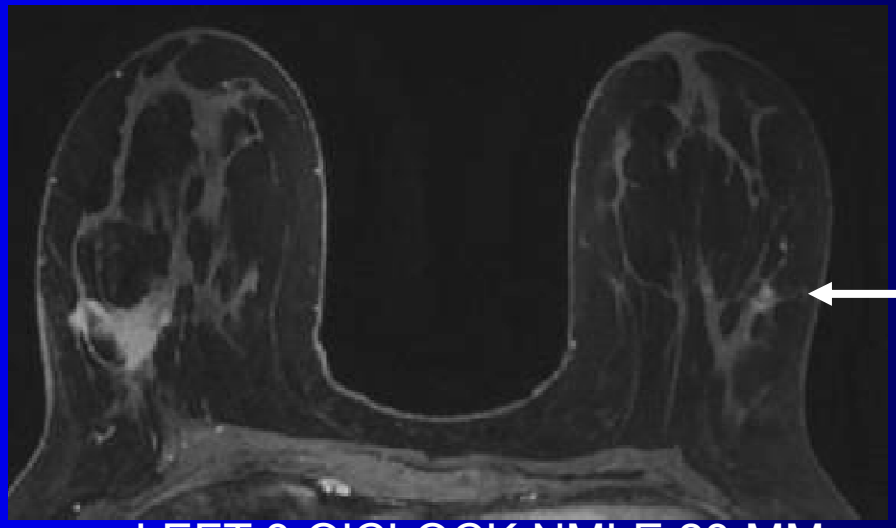
SLIDE CREDIT:
Wendy Demartini



RIGHT 9 O'CLOCK KNOWN IDC



RIGHT LEVEL 1 AXILLA KNOWN METASTATIC LAN



LEFT 3 O'CLOCK NMLE 23 MM
MRI BX = DCIS

SLIDE CREDIT:
Wendy Demartini