Surgical management of breast cancer

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Multidisciplinary decision

- Surgical oncologist
- Radiation oncologist
- Medical oncologist
- Radiologist
- Pathologist
- Plastic surgeon, psychologist, physiotherapist, geneticist, and specialized breast nurse

- Patients and family involvement in decision making for surgery.
- Patient's choice should be clearly documented.

DO ALL PATIENTS NEED RADICAL SURGERY?

Evolution of surgery

The halstead theory(1894)	Spread from one source	Radical mastectomy
The alternative theory(1980)	Systemic disease	Modified radical mastectomy, lumpectomy
The spectrum theory(1994)	Combination	

Signs of inoperability

Skin ulceration

Chest wall fixity

Axillary nodes >2.5 cm

Edema of skin

Fixed axillary nodes

Inflammatory ca breast

Supraclavicular nodes

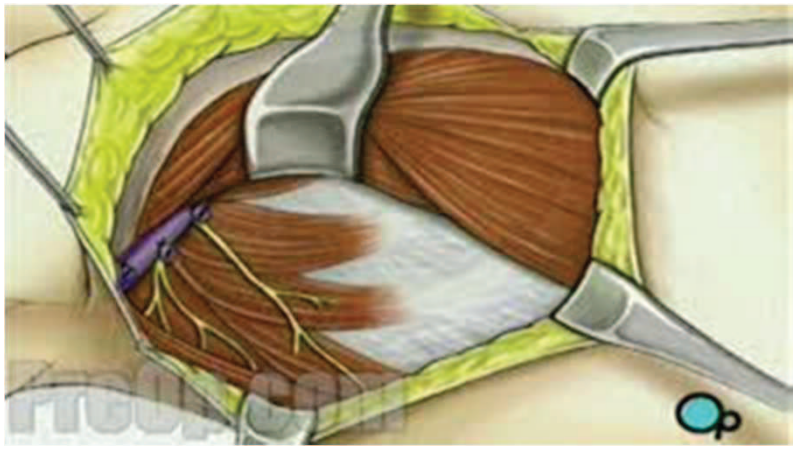
edema of arm

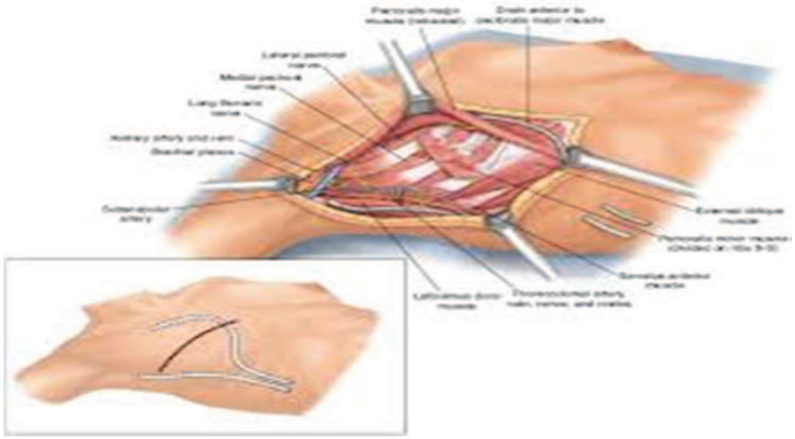
Clinically involved internal mammary nodes

satellite nodules in skin

MRM

- Patey's : Pectoralis minor removed.
- Scanlon : Pectoralis minor divided.
- Auchincloss: Pectoralis minor retracted.



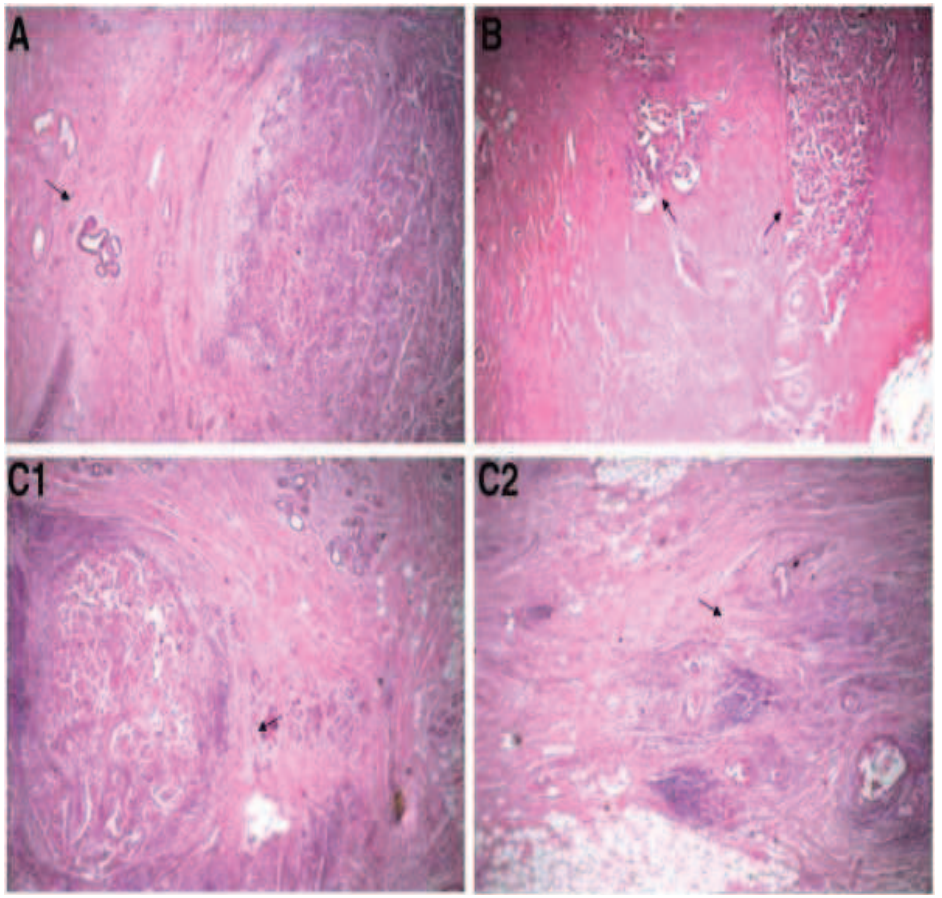


Indications

- C/I for BCT
- Patient's choice (often depend on information provided by physician)
- Fear of recurrence (patient /surgeon)
- Post Neoadjuvant chemotherapy

Shrink pattern after NACT

- Type I:solitary(61%)
- Type II:Multifocal(33%)
- Type III:Patch like (6%)



S wang et al

World J Surg Oncol. 2013; 11: 166.

TECHNICAL ASPECTS-INCISION

- Vertical elliptical
- Tranverse
- Oblique

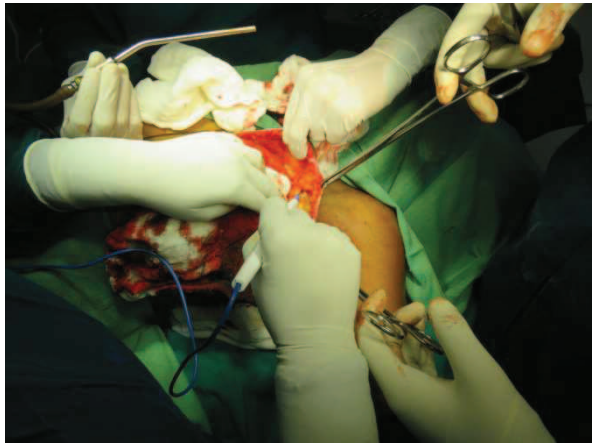
TECHNIQUE

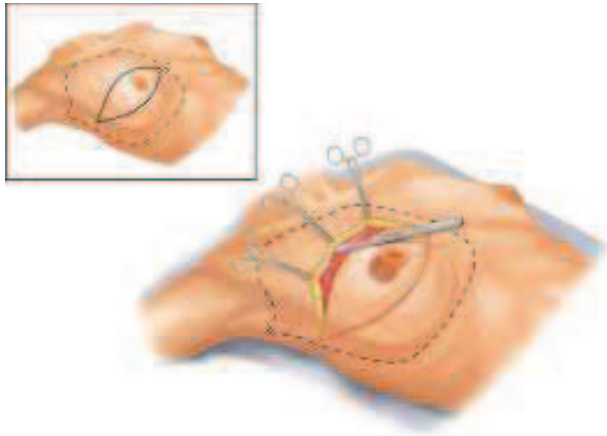
Flaps are raised upto clavicle superiorly,

Inframammary folds upto rectus abdominis fascia inferiorly,

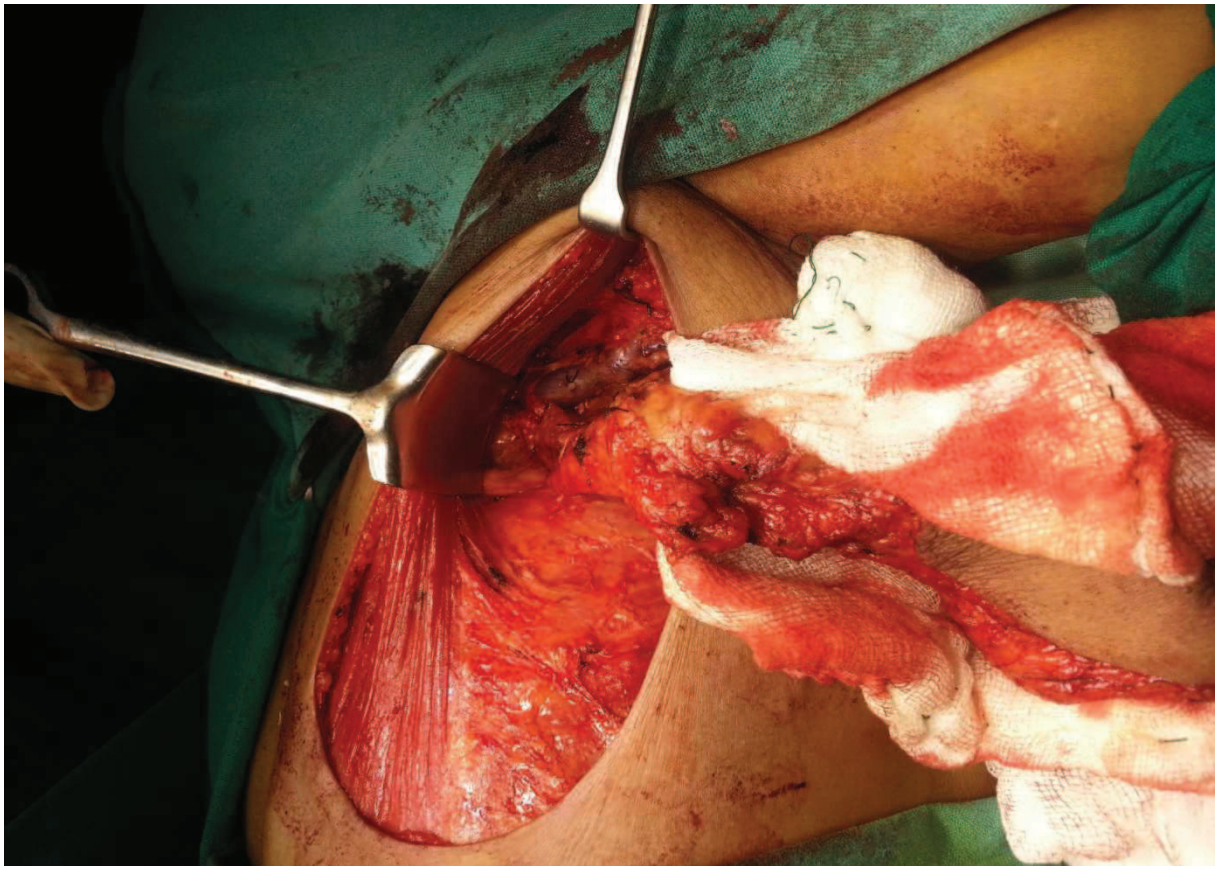
Sternal borders medially,

Anterior border of lattissimus dorsi muscle laterally.





- Breast tissue to be dissected along with Pectoralis fascia.



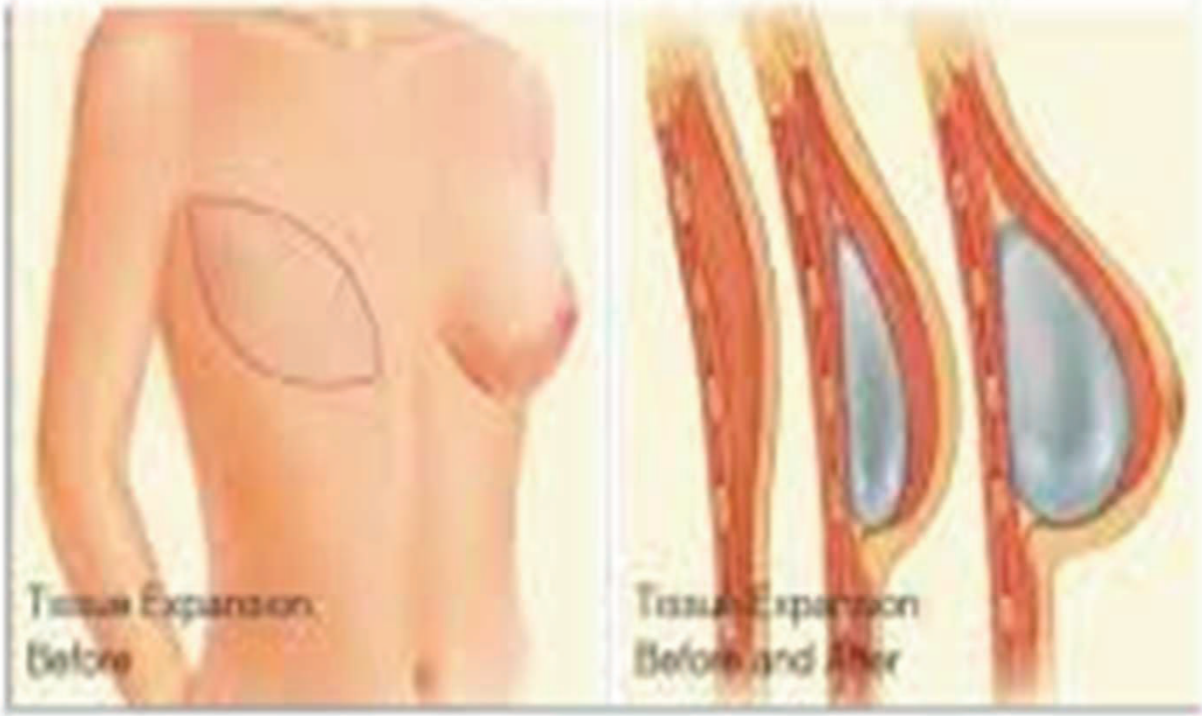
PRECAUTIONS

- Avoid very thin flaps
- Meticulous hemostasis
- Careful handling of flaps
- Dissect nerve to serratus and nuerovascular pedicle to LD muscle carefully

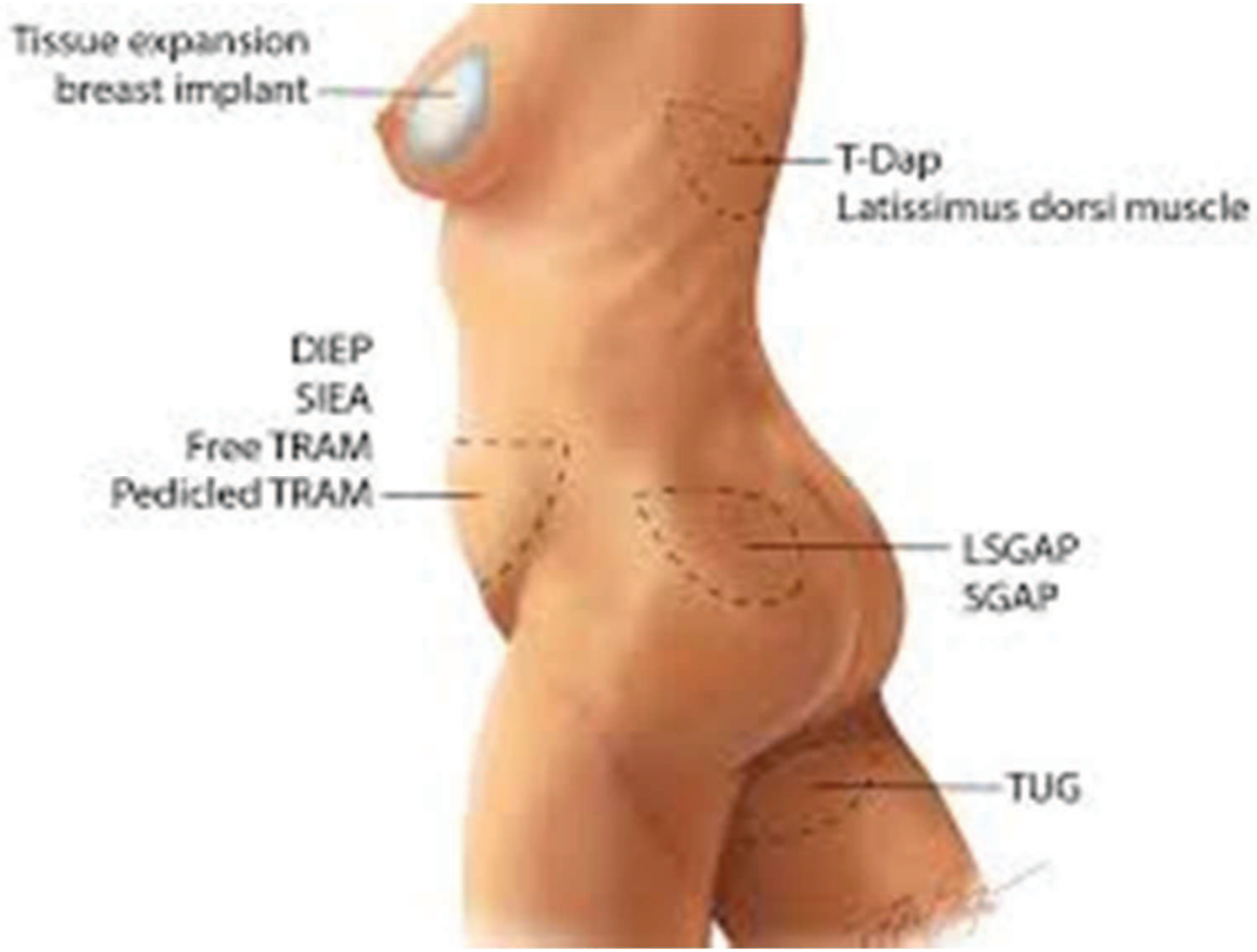
Complications of Mastectomy

- Flap Necrosis
- Seroma
- Wound Infection
- Shoulder Dysfunction

Implant Reconstruction



SPRINGFIELD CLINIC


Tissue expansion
breast implant
T-Dap
Latissimus dorsi muscle
DIEP
SIEA
Free TRAM
Pedicled TRAM
LSGAP
SGAP
TUG

Shift

Goal of BCT

To provide survival equivalent to Mastectomy with preservation of the cosmesis

To achieve low rate of recurrence in treated breast

- Women who have BCS are more likely to have positive attitude towards life.

Surgeon characteristics and use of breast conservation surgery in women with early stage breast cancer

Ann Surg 2009 May ; 249(5)

- *one small study in women with early-stage breast cancer also suggests that patients seen by female surgeons are more likely to receive BCS than mastectomy*

Arch Surg. 2001; 136(2):185–191

- the attitudes and beliefs of providers with whom they discuss surgical options may influence treatments. Such attitudes and beliefs may differ by physician specialty”
- It is possible that radiation oncologists and surgeons may differ in their attitudes regarding some of these issues.

Indications

T1/T2, N0,N1 tumors.

Selected patients with T3 tumors.

Evidence for BCT

Trials	No	Stage	Surgery	RT boost	FU	Overall survival		Local recurrence	
						cs+RT	mastectomy	CS+RT	mastectomy
Institu Gustave Roussy	179	1	2cm gross margin	15	15	73	65	9	14
Milan	701	1	quandrant ectomy	10	20	42	41	9	2
NSABP B-06,18,23	1219	1,2	lumpectomy	none	20	46	47	14	10
NCI 24,25	237	1,2	Gross excision	15-20	18	59	58	22	6
EORTC 26,27	874	1,2	1 cm gross margin	25	10	65	66	20	12
Danish 28	904	1,2,3	Wide excision	10-25	6	79	82	3	4

Contraindications for BCT

Absolute:Radiation therapy during pregnancy

Diffuse suspicious or malignant appearing microcalcification

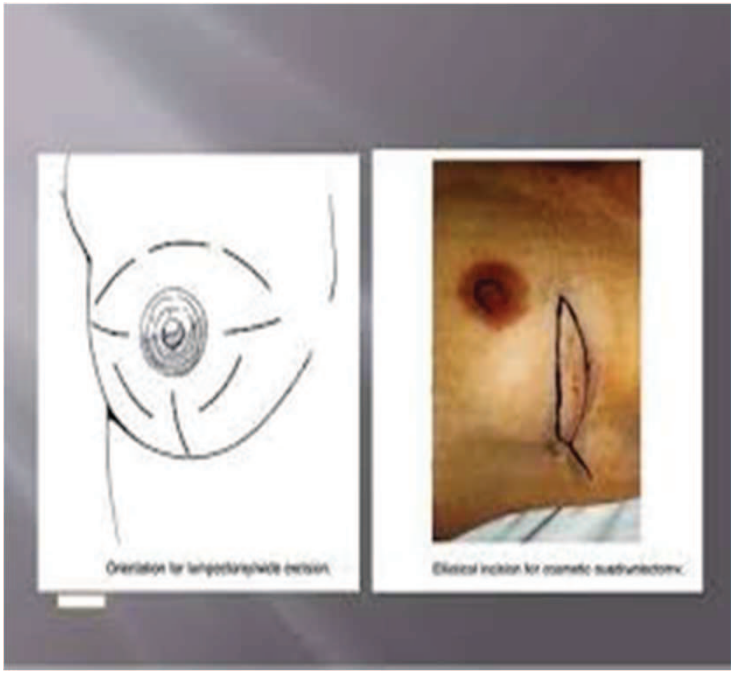
Wide spread disease that can not be incorporated by local excision through a single incision that achieves negative margins with a satisfactory cosmetic result

Persistent positive pathologic margin

- Relative : Prior radiation therapy to chest wall.
- Active connective tissue disease involving the skin (scleroderma and lupus)
- Tumors >5 cm
- Focally positive margin
- Women with known or suspected genetic predisposition in breast cancer

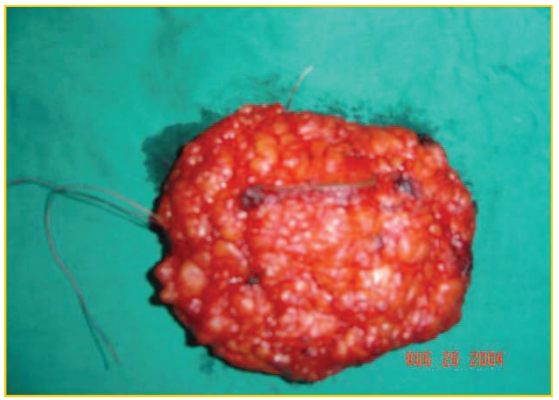
Techniques

- Wide local excision
- Curvilinear incision
- Radial incisions
- Circum-areolar incision



Basic Steps

- No skin excision unless anterior margin is very close
- Wide skin flaps to be raised
- Careful skin flap handling
- Meticulous hemostasis
- No slanting of margins
- Regular palpation and maintaining at least 1cm margin



- To go upto muscle
- Adequate light and retraction
- Marking of specimen
- Frozen section
- No drain at primary site ?
- Approximate fat
- Mobilize fat off the muscle and off the skin
- In UOQ axillary dissection from same incision

Oncoplastic closure

- Volume displacement – mobilizing breast fat and approximating.
- Volume replacement – using flaps, preferably LD flap .
- Concept of leaving cavity for seroma to accumulate no more exist.

- oncoplastic surgery is not a technique – it’s a way of thinking.

Risk factors for LR after BCT

- Patient factors: Age
  Inherited succeptibility
- Tumor factors: Margin of resection
  EIC
- Treatment risk factors: Extent of resection
  Use of a boost
  Use of adjuvant therapy

- Age: Young age is an independent risk factor
- Inherited succeptibility: BRCA1/BRCA2 mutation are at higher risk of contralateral breast cancer. (20% with mutation, 2%without mutation)
- EIC: young age and multiple close margins are a/w increased risk of IBTR and can be used to select patients who might benefit from re-excision.
- Margins of resection: negative margin :Absence of cancer cells at inked surface.

- Use of adjuvant systemic therapy

endocrine therapy NSABP B-14

Stockholm breast cancer study group

NSABP B-21

- Chemotherapy NSABP B-13

- Molecular subtype :most important significant determinant of LR after BCT (and mastectomy).

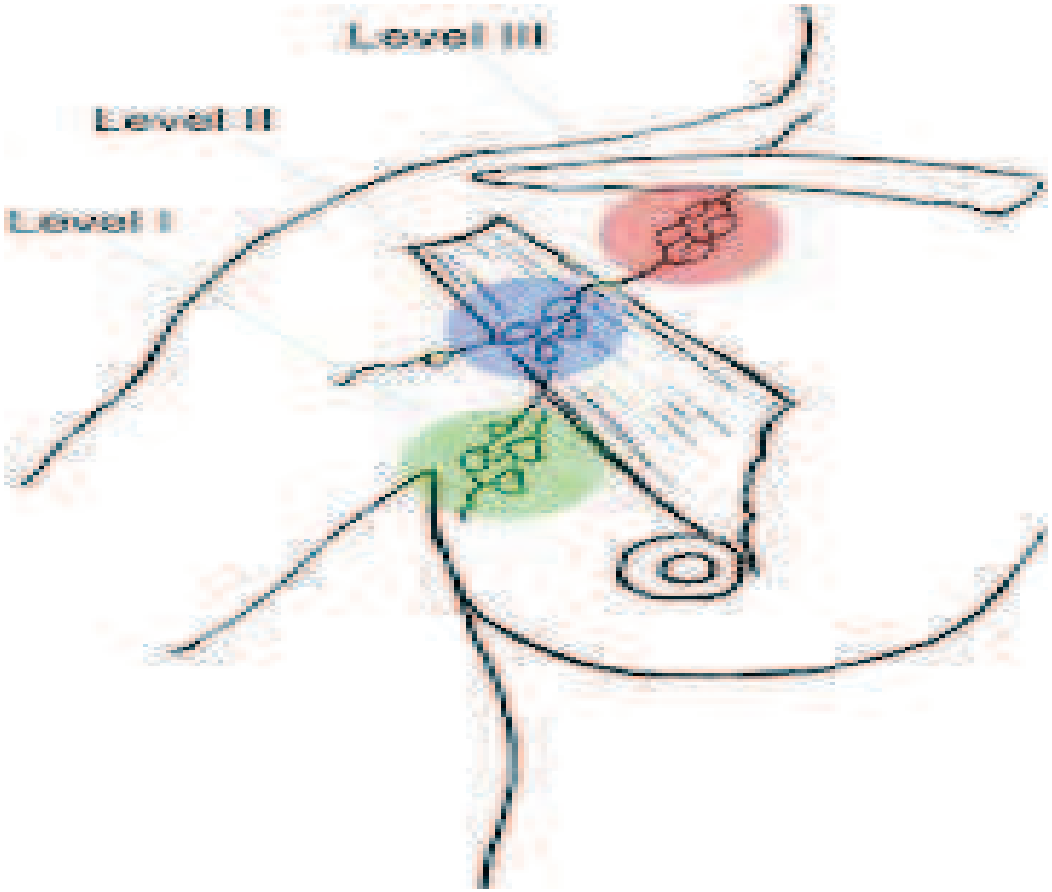
TNBC >other subtypes

- Use of Radiation boost: EORTC trial of 5318 patients

MANAGEMENT OF AXILLA

- Positive axillary nodes are harbinger of systemic disease.
- Axillary dissection – prognostic implication. No survival benefit(NSABP B-04 trial)
- Standard of care is complete axillary clearance (level I,II and III)
- Minimum number of nodal yield -12

Lymph node levels



Problems with ALND

- 10% to 20% of patients exhibit decreased range of motion of the shoulder.
- 80% experience numbness in the distribution of the intercostobrachial nerve.
- 2% to 30% report arm edema.
- 15% to 50% experience breast edema.
- 5% seroma.
- Poor QOL

BUT……

No invasive technique is as accurate as pathologic examination of the axillary nodes in predicting nodal status.

Surgical excision of the axillary nodes represents the gold standard for staging the axilla.

AND.....

Ann Surg Oncol. 1999 Jan-Feb;6(1):109-16.

The impact of prophylactic axillary node dissection on breast cancer survival--a Bayesian meta-analysis.

Orr RK.

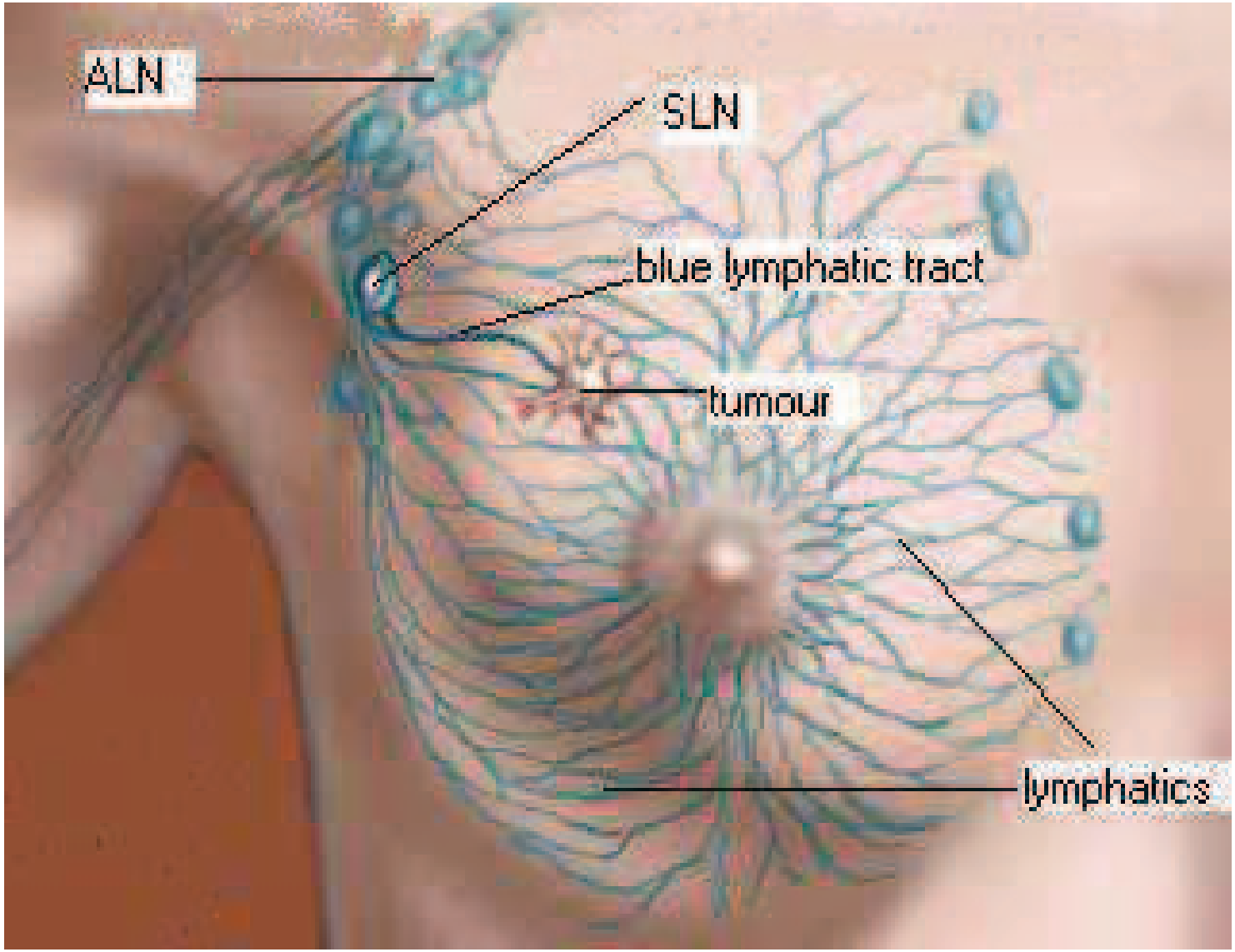
CONCLUSION- All six trials showed that prophylactic axillary node dissection : ***average survival benefit of 5.4%.***

- Survival impact and predictive factors of axillary recurrence after sentinel biopsy
- From 1999 to 2013, 14,095 patients who underwent surgery for clinically N0 previously untreated breast cancer and had sentinel lymph node biopsy were analysed
- In multivariate analysis, overall survival was significantly lower in cases of AR ($p < 0.0001$), age >50, lymphovascular invasion, grade 3 disease, sentinel node (SN) macrometastases, tumour size >20 mm, absence of chemotherapy and triple-negative phenotype.
- Isolated AR is more common in Her2-positive/HR-negative triple-negative tumours with a more severe prognosis in triple-negative and Her2-positive/HR-negative tumours

European journal of cancer , May 2016,volume 58,pages 73-82

- Shift from ALND to SLNB

SN Concept

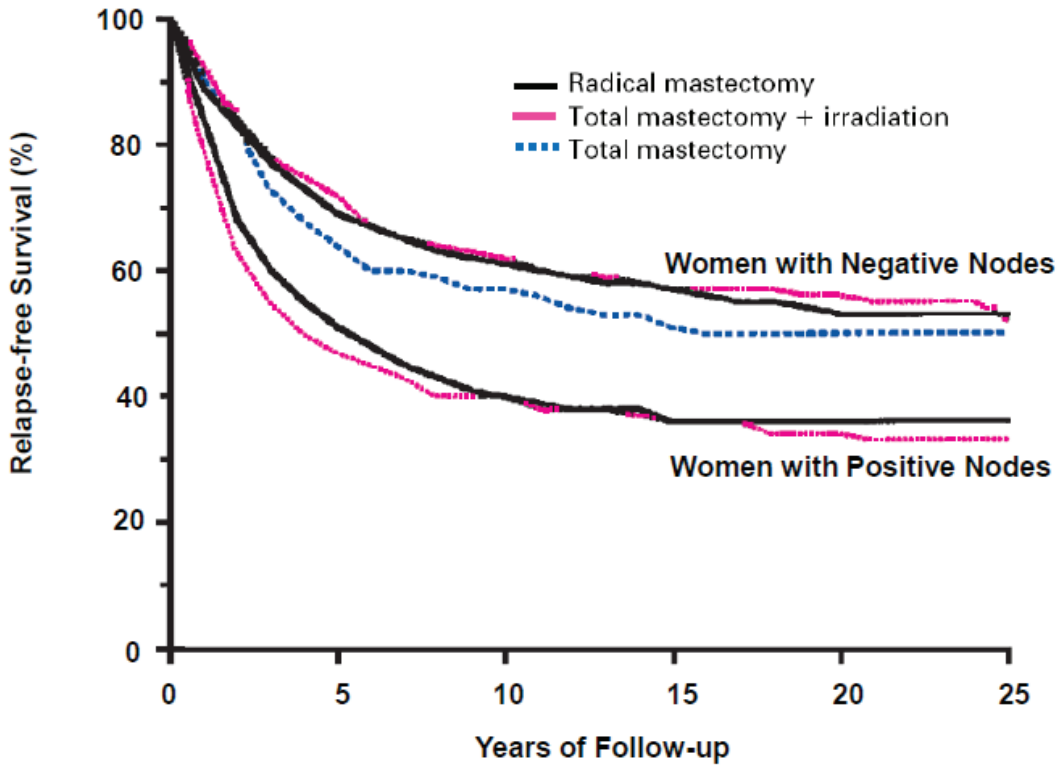


Concept

- If sentinel node is negative ,unlikely that patient will have positive axillary node . Hence avoidance of axillary dissection
- Concept has been validated in multiple randomised trials both single and multi-institutional.
- Has no impact on survival on long term follow-up of > than 10 years

NSABP 04

Nodal Treatment and Survival
NSABP B04



Fisher B, NEJM 2002;347:567

Table 1
Outcomes of randomized controlled trials comparing rate of complications with SLNB versus ALND

	Number of Patients	Limb Swelling (%)	Numbness (%)	Abduction Deficits (%)	Seroma (%)
NSABP-B32	N = 5611				
SLNB	2697	8.0	8.1	13.0	N/A
ALND	2619	14.0	31.1	19.0	
ALMANAC	N = 954				
SLNB	478	5.0	11.0	N/A	N/A
ALND	476	13.0	31.0		
Milan	N = 516				
SLNB	259	7.0	1.0	0	N/A
ALND	257	75.0	68.0	21.0	
Purushotham et al	N = 298				
SLNB	143	N/A	66.0	N/A	14.0
ALND	155		84.0		21.0
SNAC	N = 1083				
SLNB	544	2.8	N/A	2.5	17.0
ALND	539	4.2		4.4	36.0
GIVOM	N = 697				
SLNB	345	10.0	8.0	N/A	N/A
ALND	352	5.0	15.0		
Z0011	N = 744				
SLNB	371	6.0	9.0	N/A	6.0
ALND	373	11.0	39.0		14.0

SLNB for AXILLARY STAGING

- LESS MORBIDITY
- IMPROVE CHANCE OF DETECTION OF DISEASE IN LN
- CHANCE OF DETECTING NON AXILLARY LN METS
- NO SURVIVAL DIFFERENCE

For patients with

cNo

T1/ T2

Indications

- T1/T2 tumors , clinically node negative .

Contra-Indications

- T3,t4 tumors
- Clinically palpable nodes
- DCIS without mastectomy except large >than 5cm DCIS and high grade DCIS to avoid second procedure if invasive component discovered in final pathology
- Pregnancy
- Prior non oncologic surgery?
- Prior systemic treatment?
- inflammatory breast cancer

Techniques

Dye directed (Blue dye)

Radiotracer directed (Hot node)

Combination

Dye directed technique

Blue Dye Used

Iso sulphan blue; patent blue V, methylene blue

Route of administration

Intra parenchymal

Intra dermal

Sub dermal

Peri areolar

Sub areolar

Blue dye technique

Advantages

Simple, inexpensive, easy to identify a blue stained tract against yellow fatty background

Disadvantages

Strong learning curve (Giuliano)

Radiopharmacueticals

Tc99m Sulfur colloid

Filtered Tc99m labeled colloidal albumin

Site of injection

- Sub dermal/Intradermal
- Peritumoral in deep seated lesions specially in medial quadrant
- Peri areolar
- Sub areolar

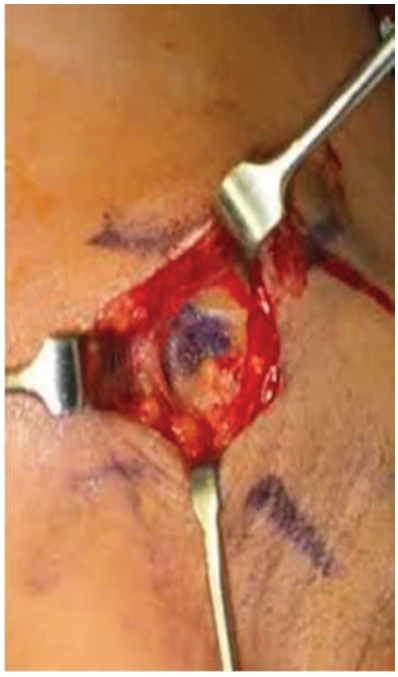
Dose and Volume

0.1-0.4 ml to 4-8 ml

300 - 400 µCi

500 uCi-1mCi

Filtered or unfiltered



Advantages of Radiotracer guided technique

- 'Road map' to the SN

- Detects SNs at unusual sites

  - Level III, sub pectoral, int. mammary

Special scenarios

- Old age
- Male breast cancer
- Locally advanced and inflammatory breast cancer
- Neoadjuvant chemotherapy
- Multicentric disease
- Ductal carcinoma insitu
- Pregnancy
- Previous breast or axillary surgery for nonmalignant conditions

SLN mapping of nonaxillary nodes

- Can identify non axillary nodes in 43% .
- Remain controversial
- Dissection is investigational
- May affect decisions regarding adjuvant systemic therapy and radiation field.
- Limitations : Interference

  high rate of technical failure in patient with parasterna hot spot

  Hot spots do not always represent metastatic disease

- Intra mammary node:

1-28% of breast cancer

same prognostic significance as axillary nodes

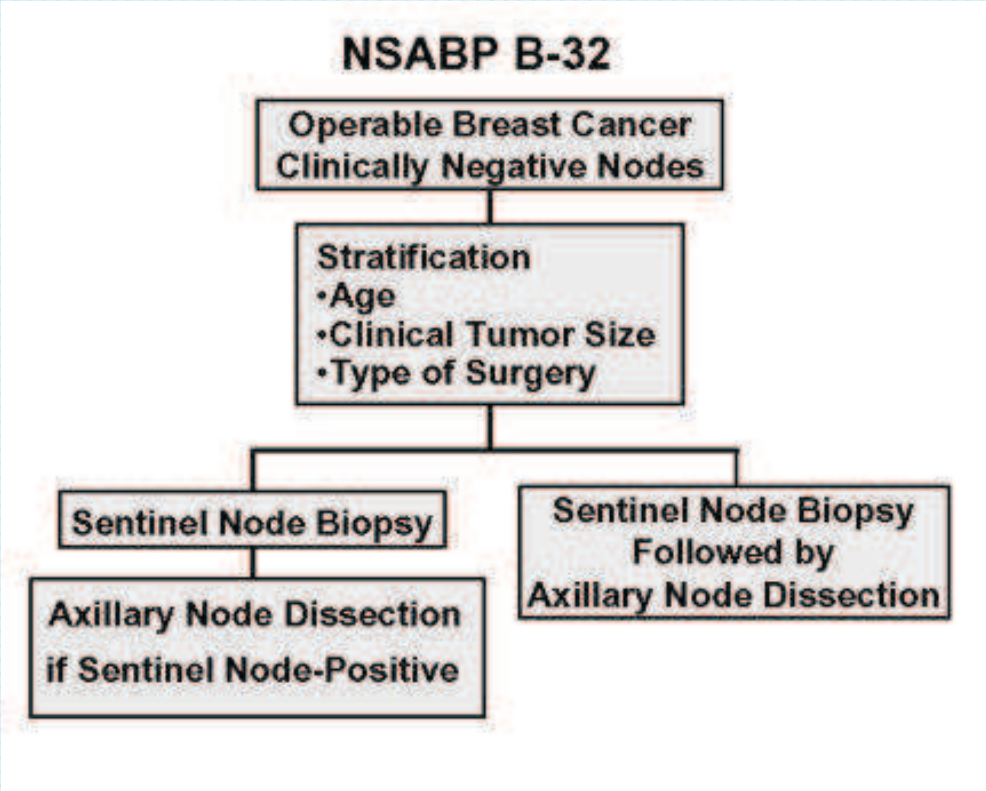
NSABP B-32

N= 5611

Lymphatic mapping was successful 97 %

False negative rate 9.8 %

No difference in OS or DFS in 8 yrs follow up



Int J Radiat Oncol Biol Phys. Author manuscript; available in PMC 2015 Mar 25.Published in final edited form as:Int J Radiat Oncol Biol Phys. 2012 Apr 1; 82(5): 2072–2078. Published online 2011 Apr 7. doi: 10.1016/j.ijrobp.2011.01.032PMCID: PMC4373416NIHMSID: NIHMS279772

Coordination of Breast Cancer Care Between Radiation Oncologists and Surgeons: A Survey Study

Reshma Jagsi, M.D., D.Phil.,* Paul Abrahamse, M.S.,† Monica Morrow, M.D.,‡ Ann S. Hamilton, Ph.D.,§ John J. Graff, M.S., Ph.D.,¶ and Steven J. Katz, M.D., M.P.H.‖Author information ► Copyright and License information ►

DO ALL PATIENTS WITH POSITIVE SLNB NEED ALND?

ACOSOG Z0011

A randomized trial of axillary node dissection in women with clinical T1-2 N0 M0 breast cancer who have a positive SN

Principal Investigator: Armando E. Giuliano, MD
165 Investigators / 177 Institutions

Giuliano A, JAMA 2011;305:589

Inclusion/Exclusion Criteria

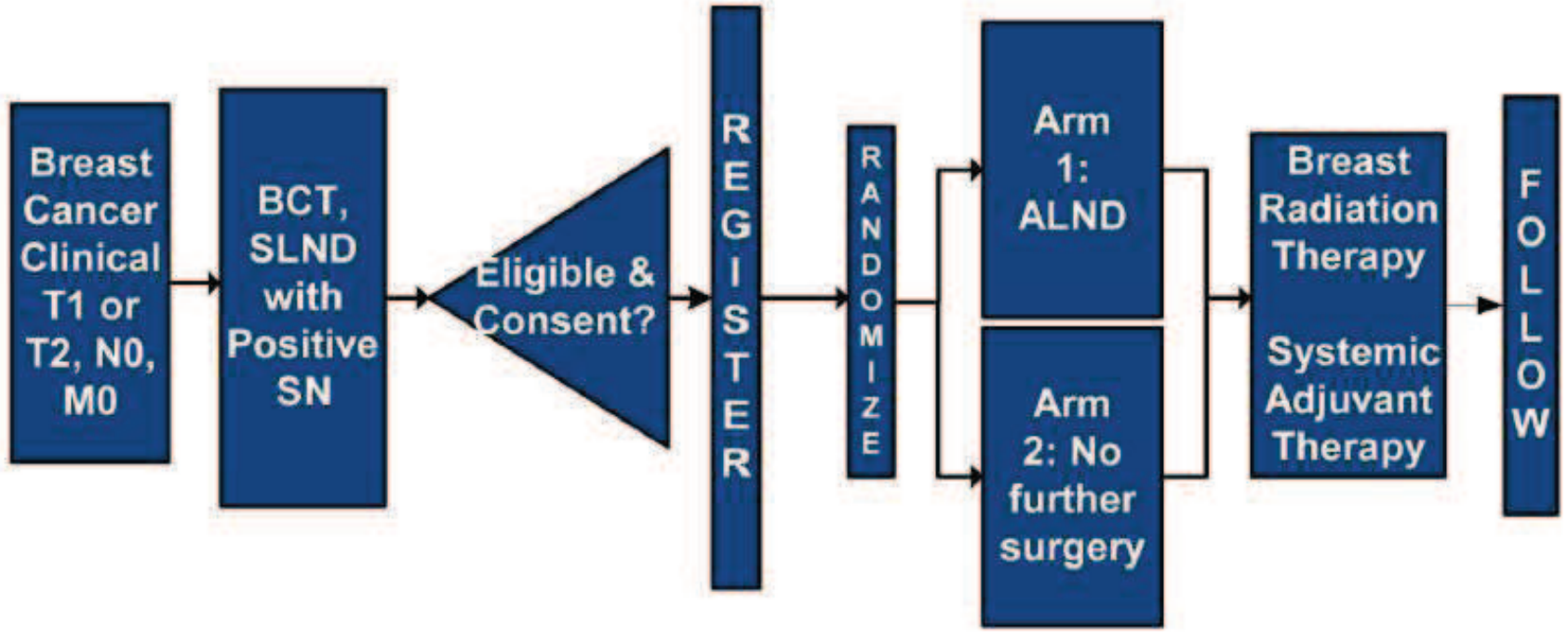
Eligibility

- Clinical T1 T2 N0 breast cancer
- H&E-detected metastases in SN (AJCC 5th edition)
- Lumpectomy with whole breast irradiation
- Adjuvant systemic therapy by choice

Ineligibility

- *Third field (nodal), irradiation*
- *Metastases in SN detected by IHC only*
- *Matted nodes*
- *3 or more involved SN*

Z0011 Study Design Schema



Patient and Tumor Characteristics

	Intent-to-treat	
	ALND n = 420	SLND n = 436
Median age	56 (24-92)	54 (25-90)
Clinical T1	68%	71%
ER+	83%	83%
PR+	68%	70%
LVI present	41%	36%

Patient and Tumor Characteristics

	Intent-to-treat	
	ALND n = 420	SLND n = 436
Grade		
1	22%	26%
2	49%	47%
3	29%	28%
Histology		
Ductal	83%	84%
Lobular	7%	9%
Other	11%	8%

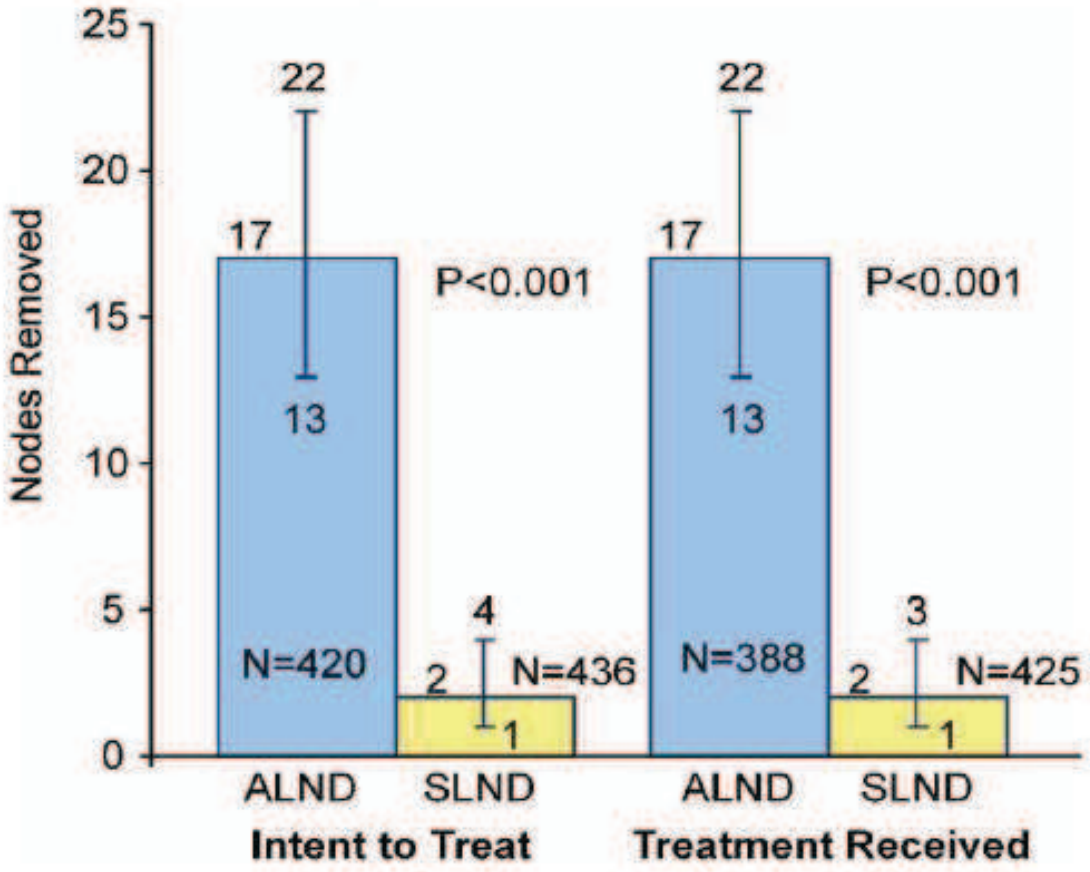
Giuliano A, Ann Surg 2010;252:426

Adjuvant Systemic Therapy

	ALND	SLND
Chemotherapy	57.9%	58.0%
Hormonal therapy	46.4%	46.6%
Either/Both	96.0%	97.0%

P = N.S.

Median Number of Lymph Nodes Removed



106 (27.4%) of patients treated with ALND had additional positive nodes removed beyond SN.

Locoregional Recurrence Z11

Median F/u 6.3 yrs

	ALND n = 420	SN n = 436
Local	15 (3.6%)	8 (1.8%)
Regional	2 (0.5%)	4 (0.9%)
Total	17 (4.1%)	12 (2.8%)

p = 0.11

Giuliano A, Ann Surg 2010;252:426

Survival Outcomes Z11

Median F/u 6.3 yrs

	% DFS	% OS
SN	83.9 (80.2-87.9%)	92.5 (90-95.1%)
ALND	82.2 (78.3-86.3%)	91.8 (89.1-94.5%)
HR	0.82 (0.58-1.17)	0.79 (.56-1.1)
Adjusted HR*	0.88 (0.62-1.25)	0.87 (.62-1.2)

Adjusted for age, adjuvant rx

Giuliano A, JAMA 2011;305:589

SN only positive node in 70% of cases.

0.9% regional recurrence at 6.3 years completely consistent with other published studies.

Z11: Is it Practice Changing?

Yes, but not for:

- Clinically N+
- LABC
- Mastectomy
- PBI
- Neoadjuvant Therapy

Top 5 Things Critics Don't Like About Z11

5. Follow-up isn't long enough
4. Not enough ER negatives
3. Not enough young women
2. "Failed Study" — didn't reach accrual goal

1 Thing Critics Don't Like About Z11

Doesn't seem right

To cut is to cure
(and I get paid for doing it)

Other factors

- Protocol noncompliance- 11 patients assigned to the SLNB only arm underwent an ALND, and 32 patients assigned to the SLNB +ALND didn't proceed with and ALND.
- Loss to follow up: almost 20% patients
- Lack of analysis the took into account the numbers of patients with isolated tumor cell clusters, micrometastases, or macrometastases in the two arms.

International Breast Cancer Study Group (IBCSG) 23-01 trial

- Patients with micrometastatic (2 mm) disease within the sentinel node.
- Included node negative young patients.
- Regional recurrence was <1% for the ALND arm and 1% for the no ALND arm
- No differences in DFS, cumulative incidence, or OS

In clinically node-negative patients undergoing BCT with macrometastases in the SN:

- Systemic Rx decision made
- ALND not necessary for local control
- ALND does not contribute to survival

CAN PATIENTS UNDERGO AXILLARY IRRADIATION INSTEAD OF AXILLARY SURGERY?

EORTC 10981-22023 AMAROS (After Mapping of the Axilla: Radiotherapy Or Surgery?) trial

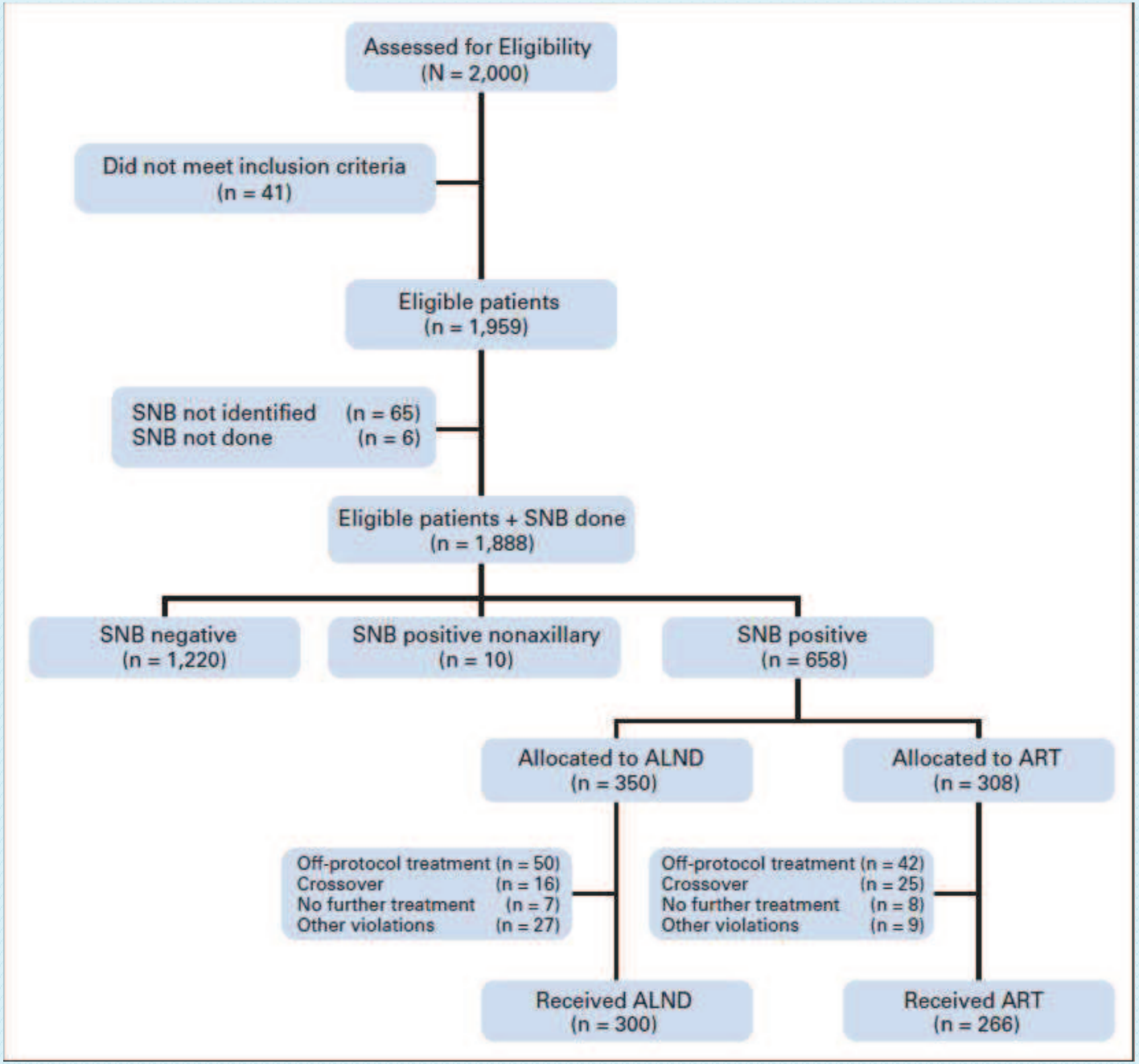

Assessed for Eligibility
(N = 2,000)
Did not meet inclusion criteria
(n = 41)
Eligible patients
(n = 1,959)
SNB not identified (n = 65)
SNB not done (n = 6)
Eligible patients + SNB done
(n = 1,888)
SNB negative
(n = 1,220)
SNB positive nonaxillary
(n = 10)
SNB positive
(n = 658)
Allocated to ALND
(n = 350)
Allocated to ART
(n = 308)
Off-protocol treatment (n = 50)
Crossover (n = 16)
No further treatment (n = 7)
Other violations (n = 27)
Off-protocol treatment (n = 42)
Crossover (n = 25)
No further treatment (n = 8)
Other violations (n = 9)
Received ALND
(n = 300)
Received ART
(n = 266)

Table 2. Administration of Adjuvant Therapy

Therapy	ALND Arm (n = 300)		ART Arm (n = 266)	
	No. of Patients	%	No. of Patients	%
None	23	8	24	9
Endocrine therapy	95	32	80	30
Chemotherapy	35	12	39	15
Chemotherapy plus endocrine therapy	140	47	123	46
Missing	7	2	0	0
Radiotherapy (breast/chest wall)	257	86	237	89
Axillary radiotherapy	15	5	266	100

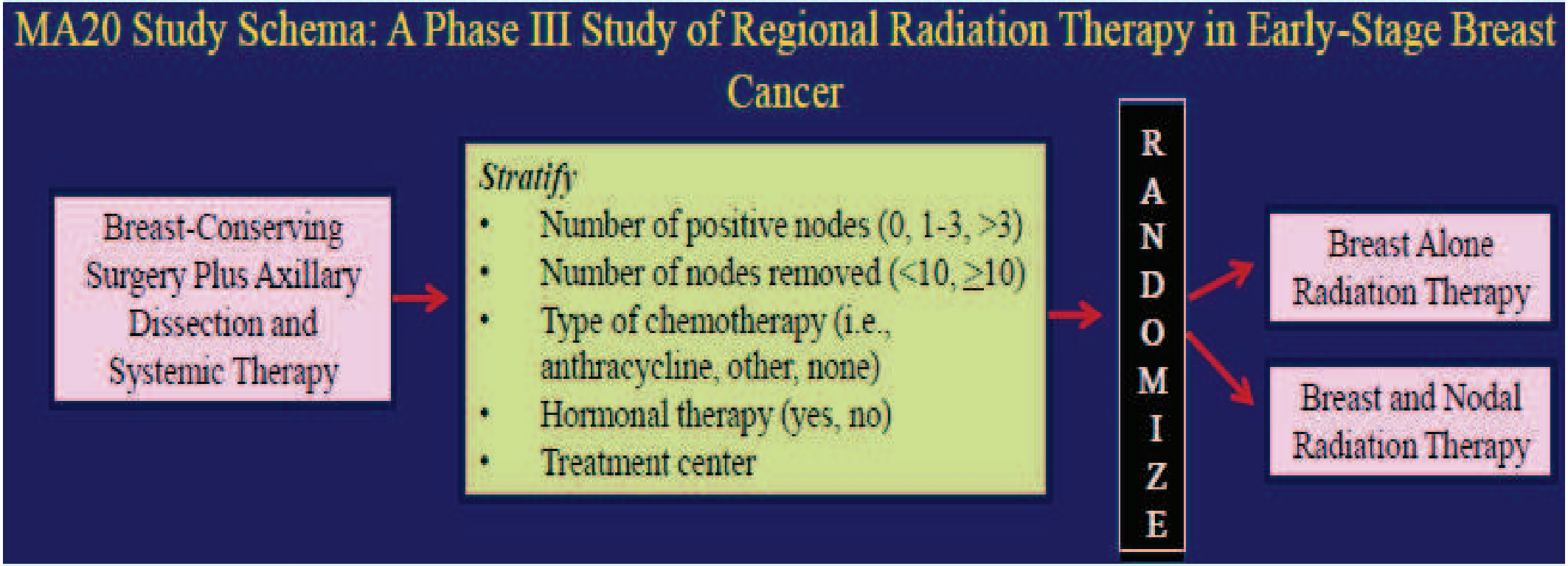
Abbreviations: ALND, axillary lymph node dissection; ART, axillary radiation therapy.

- Preliminary Analysis

  Patients with a tumor-positive sentinel node, treating the axilla with radiation instead of lymph node dissection, and thus performing an incomplete axillary staging, does not appear to significantly influence the prescription of adjuvant systemic therapy.

AND THEN THERE WERE SOME…

NCIC-CTG MA.20 trial



NCIC-CTG MA20 Eligibility Criteria

Inclusion Criteria

- Invasive, female breast cancer
- Breast conserving surgery plus Level I, II axillary dissection (or SLN only if node negative)
- Systemic therapy with chemotherapy, hormones, or both
- Moderate to high risk of regional recurrence on the basis of:

  -Involved axillary nodes

  -Or if node-negative, patients must have tumors ≥2.0 cm in diameter, have <10 nodes dissected, and have either grade 3 histology, estrogen receptor-negative disease, or the disease present in lymphovascular spaces in the breast

Olivotto et al. Clin Br Can 2003

- Planned accrual 1822 patients (actual 1832)
- Powered to detect 5% improvement in survival at 5 years
- DSMC approved plan for protocol specified interim analysis of patterns of recurrence, survival and toxicity at 5 year
- Based upon results at interim analysis, DSMC advised results be released

Whelan et al. ASCO 2011 LBA1003

MA20

5-Year Results

	WBI	WBI + RNI	p
Isolated LR DFS*	94.5%	96.8%	.02
Distant DFS	87.0%	92.4%	.002
DFS	84.0%	89.7%	.003
OS	90.7%	92.3%	.07

*identical no. IBTR's in each group

Whelan et al. ASCO 2011 LBA1003

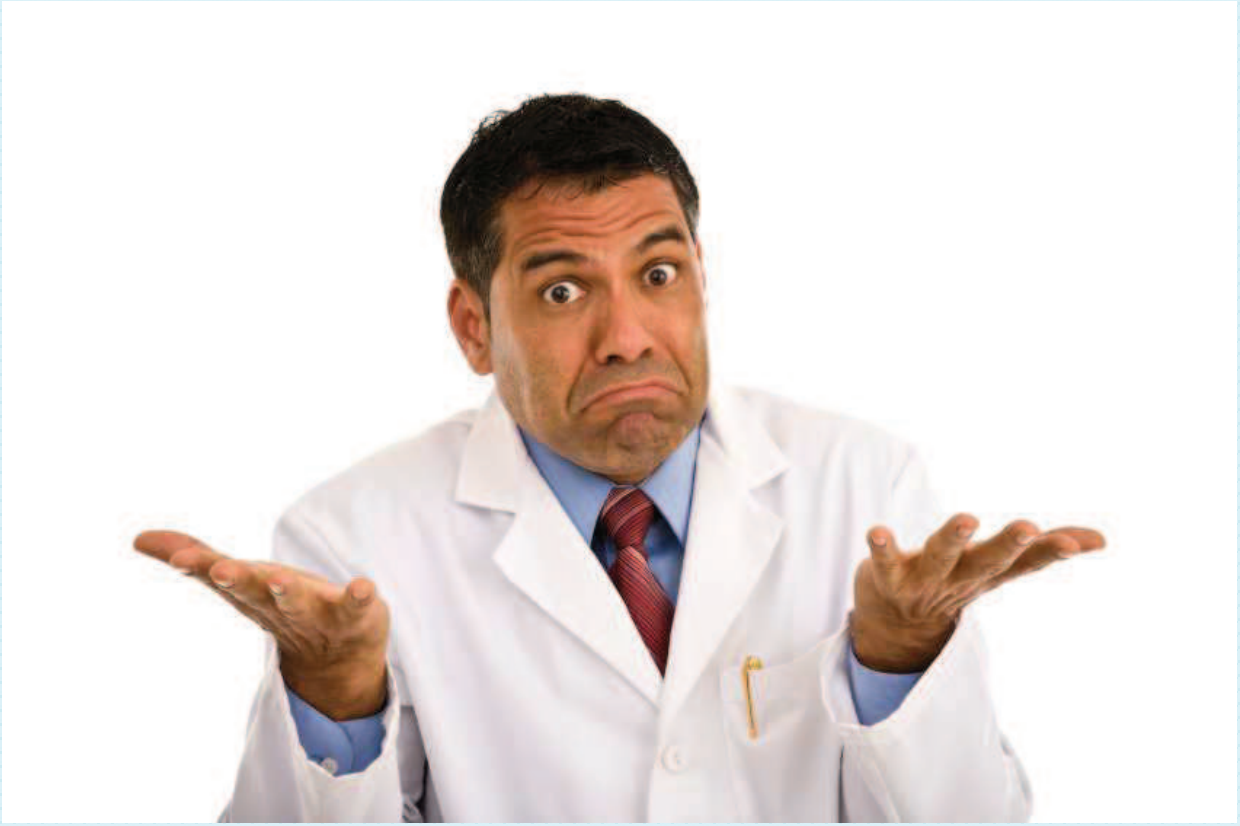
Adverse Events

	WBI	WBI + RNI	p
Pneumonitis ≥ grade 2	0.2%	1.3%	.01
Lymphedema	4.1%	7.3%	.004

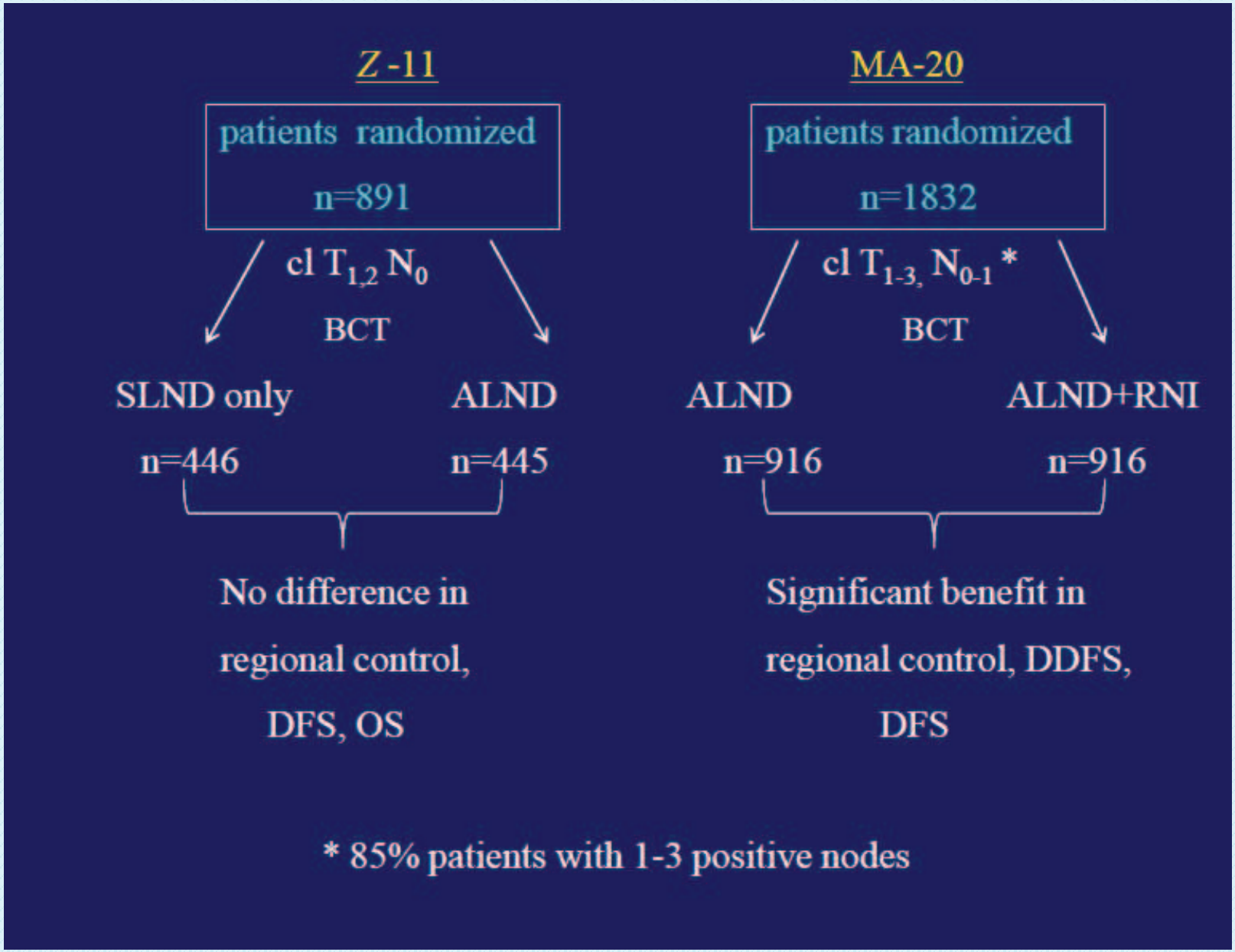
Whelan et al. ASCO 2011 LBA1003

Provocative Results!!

2% improvement in LRC translates into 5% improvement in DDFS and DFS at 5 years.



How should we interpret these findings given the results from *Z-11*?


Z-11
patients randomized
n=891
cl T1,2 N0
BCT
SLND only
n=446
ALND
n=445
No difference in
regional control,
DFS, OS
MA-20
patients randomized
n=1832
cl T1-3, N0-1 *
BCT
ALND
n=916
ALND+RNI
n=916
Significant benefit in
regional control, DDFS,
DFS
* 85% patients with 1-3 positive nodes

Statistical Issues

- MA-20 completed accrual; *Z-11 did not*
- Both underestimated survival, especially *Z-11*
- *Z-11 based power of trial on 5x more deaths than number observed.*

  Due to overestimation of number of deaths, planned interim analyses abandoned. However, Type I error that SLND not inferior to ALND preserved. And while power was decreased, less of concern since positive trend in favor of SLND.

- MA-20: toxicity analysis at first interimin analysis for survival

Trials asking different but related questions regarding regional control and impact on BCS.

- Tumor burden appears to be greater in patients enrolled on MA-20 but populations appear to be overlapping to some degree
- RT fields on MA-20. No RT fields discription in *Z-11*.

We need more information to better understand disparate results.

- MA-20: Outcome data by number positive nodes/involvement of micromets

- *Z-11: Information regarding RT fields; outcomes by extent of nodal disease (beyond micromets); further follow-up since 83% had ER disease and late recurrences likely*

PATIENTS REQUIRING AXILLARY DISSECTION

- When no sentinel node is identified.
- Clinically node positive disease.
- Three or more sentinel node positive.
- Extracapsular spread.

- 1-2 SLNB
- High grade tumor.
- Negative Er/Pgr receptor status.
- Young patients.

ROLE OF AUS AND INTRAOPERATIVE US

Recent studies dealing with AUS in breast cancer was to identify women with lymph node metastases (imaging N1[iN1]) to spare SLNB and refer them directly to ALND.

Cheng et al. World Journal of Surgical Oncology 2013, 11:296
http://www.wjso.com/content/11/1/296

WORLD JOURNAL OF SURGICAL ONCOLOGY

RESEARCH Open Access

Sparing sentinel node biopsy through axillary lymph node fine needle aspiration in primary breast cancers

Yu-Shu Cheng[1], Shou-Jen Kuo[1,2,3] and Dar-Ren Chen[1,2,3*]

Abstract

Background: Axillary lymph node status is an important staging and prognostic factor in breast cancer. This study aimed to evaluate the efficacy of axilla fine needle aspiration cytology (FNAC) in primary breast cancer without a palpable node and even without image characteristics of a metastatic node.

Methods: From June 2008 to January 2012, 77 patients met the inclusion criteria of having received a FNAC procedure during the diagnostic protocol of primary breast cancer with the characteristic of impalpable axilla nodes, and of having received axillary surgery after that, according to the guidelines. The patients' characteristics, clinical-pathological features, pre-operative axillary lymph node FNAC findings, surgical lymph node report, and definite pathologic staging were reviewed.

Results: The FNAC procedures had a reported sensitivity of 58.82%, specificity of 100%, positive predictive value of 100%, negative predictive value of 72.55%, and accuracy of 80.28%. There were no false positives on FNAC; therefore, the positive likelihood ratio approached infinity. The negative likelihood ratio was 41.18%. Axillary lymph node FNAC is feasible in newly diagnosed breast cancer patients to evaluate metastatic lymph nodes even in those without clinical or ultrasonic evidence of lymphadenopathy.

Conclusions: FNAC can be a routine evaluation for most primary breast cancer patients with benefits in expediting treatment. For those patients with positive findings of the axilla, sentinel node biopsy can be avoided.

Keywords: Axillary lymph node, Breast cancer, Fine needle aspiration cytology

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17. Marti JL, Ayo D, Levine P, Hernandez O, Rescigno J, Axelrod DM: **Nonimage-guided fine needle aspiration biopsy of palpable axillary lymph nodes in breast cancer patients.** *Breast J* 2012, **18**:3–7.
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Two planned prospective trials are focussing on this topic:

- **SOUND** (Sentinel Node vs. Observation after axillary Ultrasound).

- **INSEMA**-Trial, an Intergroup study to compare axillary SLNB vs. no axillary surgery in patients with early primary breast cancer (Gentilini & Veronesi 2012).

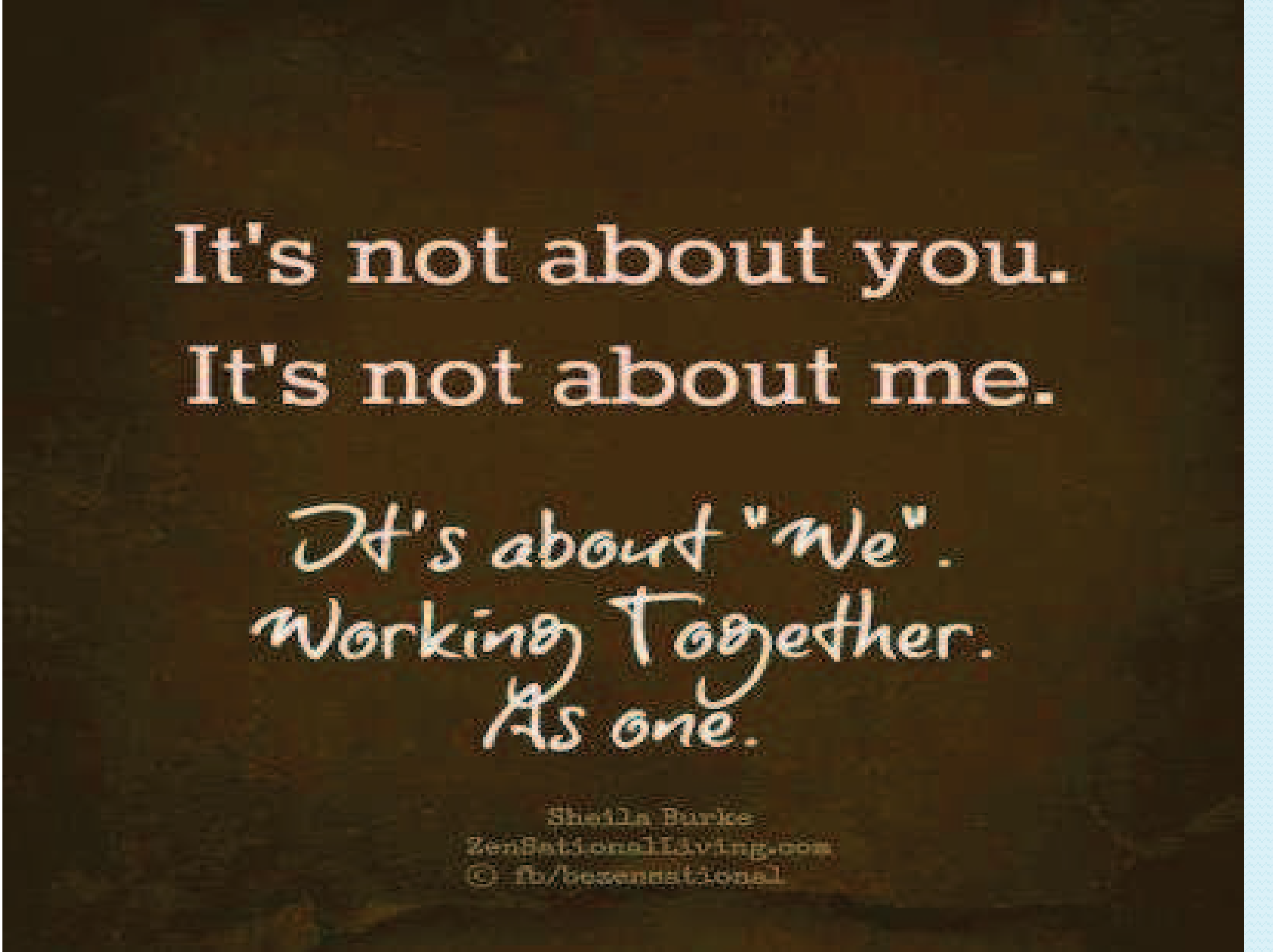
Patients with newly diagnosed breast cancer routinely see surgeons, but the frequency and timing of consultation with radiation oncologists has not been well characterized. Therefore, this study seeks to answer several questions. First, when do radiation oncologists become involved in the care of patients with newly diagnosed breast cancer? Second, do radiation oncologists feel that they are involved in the care of the breast cancer patient at the appropriate time in the decision-making process? Third, are certain provider or practice characteristics associated with more coordinated multidisciplinary care? And finally, do surgeons and radiation oncologists have different opinions regarding optimal management in certain common breast cancer scenarios?

Distribution of physician responses to items related to frequency and timing of radiation oncologist participation

Responses	Share of patients		
	Few or almost none	1/3 to 1/2	2/3 or more
Surgeon responses			
Share of patients for whom surgeon discussed plan with radiation oncologist before definitive surgery	43.5	31.4	25.1
Share of patients who consulted with a radiation oncologist before definitive surgery	49.7	31.3	19.0
Radiation oncologist responses			
Share of patients seen in consultation before definitive surgery	49.6	36.5	13.9
Share of patients for whom treatment plan was discussed with surgeon before definitive surgery	39.5	34.2	26.3
Share of patients for whom radiation oncologist discussed treatment plan with medical oncologist before initiating radiotherapy	9.7	33.3	57.0
Share of patients for whom radiation oncologist discussed treatment plan with plastic surgeon before initiating radiotherapy	78.8	16.8	4.4

Int J Radiat Oncol Biol Phys. 2012 April 1; 82(5): 2072–2078.

- Multidisciplinary management
- More emphasis on conservative procedures, both breast and axilla
- Individulize the management of axilla
- ITC- Not indicated
- Micrometastasis: Not entirely clear
- Limited disease(1-2 nodes): Individualize
- > 3 positive nodes: ALND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It's about "We".
Working Together.
As one.
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