



Memorial Sloan-Kettering Cancer Center
1275 York Avenue, New York, NY 10065

6th Brazilian Breast Cancer Conference
Sao Paulo, Brazil

10 March 2012

Controversial Issues In the Surgical Management of Early-Stage Breast Cancer

Nipple Sparing Mastectomy

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Key Facts in This Case

- Patient has DCIS
- Patient has known deleterious BRCA1 mutation

What Type of Mastectomy for DCIS?

- Conventional
- Skin sparing
- Nipple sparing

Outcome of Mastectomy in DCIS

Metaanalysis:	21 studies 1574 patients
Local Recurrence:	1.4% (0.7 – 2.1%)

Local Recurrence After Skin Sparing Mastectomy DCIS

<u>Author</u>	<u>No. of Cases</u>	<u>Mean f/u (mo)</u>	<u>% LR</u>
Rubio	95	44	3.1
Slavin	26	45	3.8
Spiegel	44	118	0
Greenway	28	49	0
Carlson	223	82	3.1

What About Nipple Sparing Mastectomy?

Concerns

- NSM leaves behind ductal tissue + breast tissue in order to preserve blood supply.
- Occult nipple involvement present in 6-31% of cancers.
- Most studies of NSM are in invasive cancer.

Outcomes of NSM

Assessing outcomes is difficult due to:

- Heterogeneity of inclusion criteria
- Variable surgical technique
- Retrospective studies
 - Under-reporting of complications
- Small numbers

This Is Not Standard Practice



10/26/2011

Concerns in NSM

- Occult cancer retained in NAC
- New cancer developing in retained breast tissue

What Is the Risk of Nipple Involvement with Carcinoma?

- Older reports range from 0-58%
- Studies prior to era of BCT likely *underestimate* risk of nipple involvement since patients undergoing mastectomy today often have extensive disease precluding BCT.

What Is the Incidence of Occult Nipple Involvement with Carcinoma?

- Prospective study 316 consecutive mastectomy specimens at MGH
- Nipples grossly normal
- Multiple histologic sections
- 232 therapeutic mastectomies
 Median age 55 yrs, 62% postmenopausal
- 84 prophylactic mastectomies
 Median age 46 yrs

What Is the Incidence of Occult Nipple Involvement with Carcinoma?

Median distance tumor → nipple: 4 cm

21% involved with invasive ca or DCIS

62% of involved nipples had DCIS

Predictors of Nipple Involvement

Multivariate analysis

<u>Feature</u>	<u>p-value</u>
T size	.0126
Tumor — nipple distance	.0176
HER amplification	.0047

Can Nipple Involvement Be Predicted by Frozen Section of Subareolar Tissue?

n = 45 involved nipples

36/45 subareolar tissue contained cancer

9/45 only nipple involved

Sensitivity = 80% NPV 96%

Intraoperative Assessment of Nipple Margin

- Nipple involvement on final pathology in 2.8-20% of patients selected based on T size, distance from nipple.
- Frozen section false-negative rates 1-3% in smaller studies.
- Petit (n = 1001) false-negative rate 8.6%

Can MRI Better Predict Nipple Areola Involvement?

	Overall (125 pts)	Invasive ca (67 ID 17 IL)	DCIS (41)
Sensitivity	57%	75%	33.3%
Specificity	85.5%	86.1%	84.4%
Positive PV	44.4%	47.4%	37.5%
Negative PV	90.8%	95.4%	75%

Is the Retained NAC at Risk for Future Cancer Development?

- 15/62 (24%) NACs in BRCA1/2 carriers had TDLUs.
- Only one-third of these were in the nipple papilla.

Oncologic Concerns

- Retained NAC is not the only risk factor for ↑ local recurrence.
- Exposure is more difficult than with SSM increasing the risk of residual breast tissue.

Clinical Outcomes NSM

European Institute of Oncology 3/02-12/07

Median f/u: 50 months
All patients received 16 Gy to NAC

	<u>Invasive Cancer</u>	<u>DCIS</u>
# Cases	772	162
5yr LR		
Breast	3.6%	4.9%
NAC	0.8%	2.9%

CAUTION: At 20 mo f/u, no NAC recurrences, 1.4% LR

Recurrence in the NAC

- 5/6 recurrences in invasive cancer had an EIC.
- 5/6 invasive cancers overexpressed HER2.
- 64% of NAC recurrences were Paget's disease.

Prophylactic NSM

- Cancer in NAC rare.
- Subsequent breast cancer uncommon, but:
 - 1) Follow-up is short
 - 2) Limited experience very high-risk women (BRCA carriers)

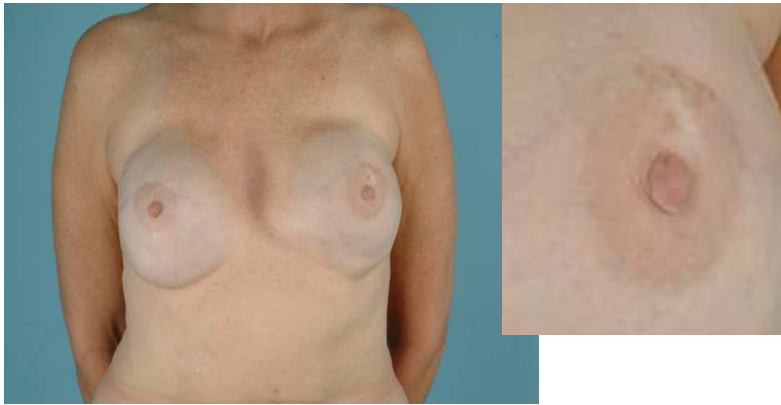
Non-Oncologic Issues

- Nipple necrosis
- Nipple sensation
- Cosmetic outcome

NIPPLE AND AREOLA COMPLICATIONS

Partial Necrosis (1/3 involvement)

14/205 (6.6%)



Partial Necrosis
(2/3rd involvement)

4/205
(1.9%)



Total Necrosis
requiring excision

3/205
(1.5%)



Factors Predicting Nipple Necrosis

Patient

Age (usually older)

Smoking

Technical

Thin areolar flap

Circumareolar incisions

Flap or permanent implant reconstruction

Algaithy ZK, Eur J Surg Oncol 2012;38:125

Rusby JE, Br J Surg 2010;97:305

Nipple Sensation

Scale 0-10

Petit n = 414 mean 2.0

Yueh n = 17 mean 2.8

Sensation present

15% at 1 year

Denewer: 37/41

Nahabedian: 6/14 ↓ quality

Cosmetic Satisfaction

- Rates of satisfaction among small patient samples are high.
- Whether cosmetic satisfaction is improved over SSM + nipple reconstruction cannot be determined from existing data.

Prospective Evaluation NSM: MDACC

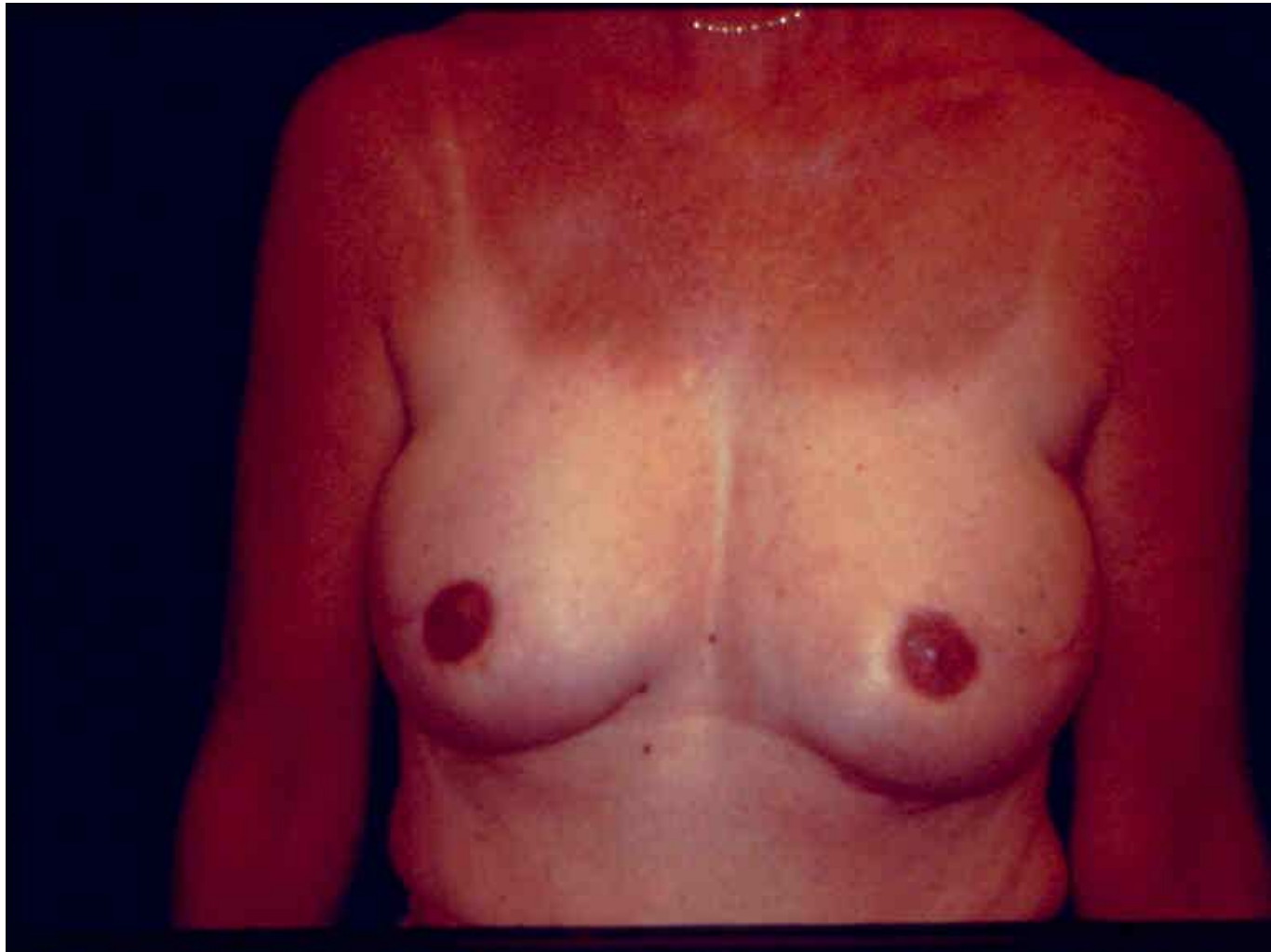
54 NSM, 33 patients
37 prophylactic

NAC necrosis: Partial 20.4%, Total 7.4%

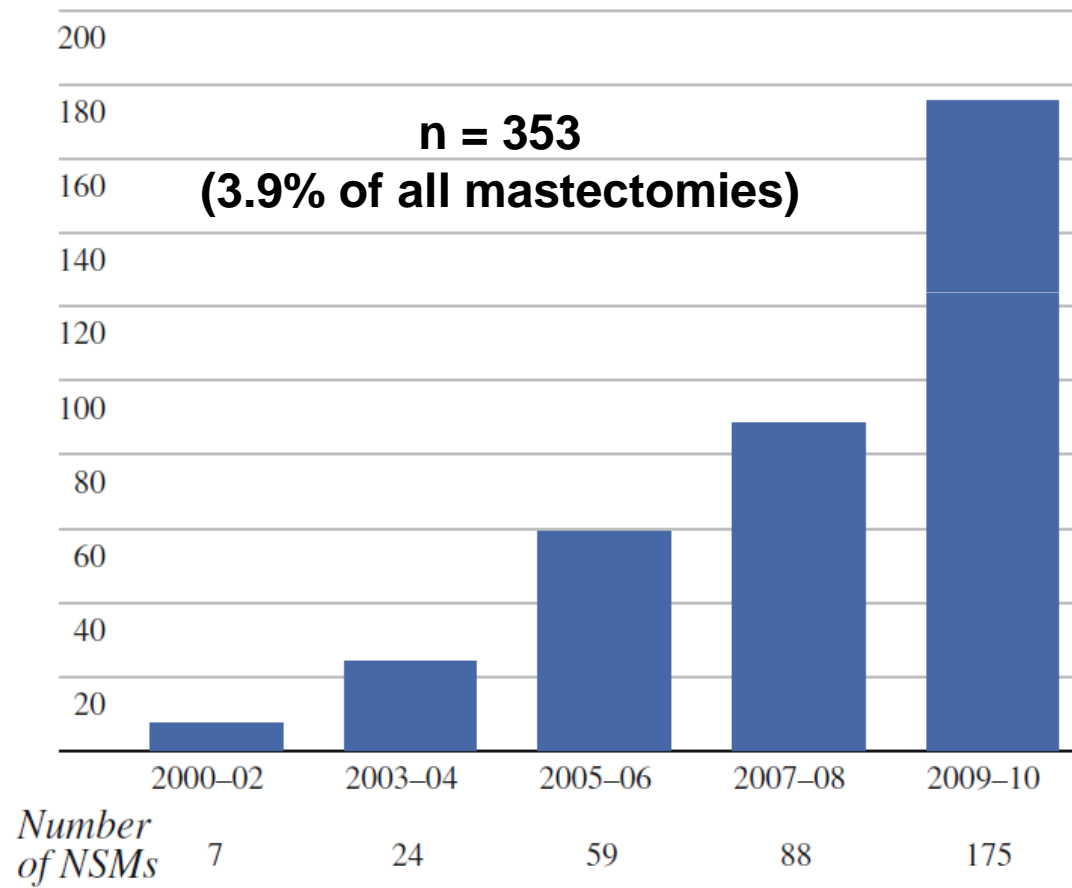
Cosmetic Outcome

	<u>Breast</u>	<u>NAC</u>
Acceptable	73%	55.8%
Poor	13.5%	28.8%
Unacceptable	13.5%	15.4%





Trends in NSM at MSKCC



MSKCC Experience NSM

Patient Characteristics

Therapeutic n = 157

- 21% DCIS
- 75% of invasive cancers Stage I
- Median T size 1.1 cm
- Positive nodes 5.5%

Prophylactic n = 79

Known BRCA1	20%
Known BRCA2	8%
Occult DCIS	8 cases, invasive 3

Median f/u 10 months — no local recurrence

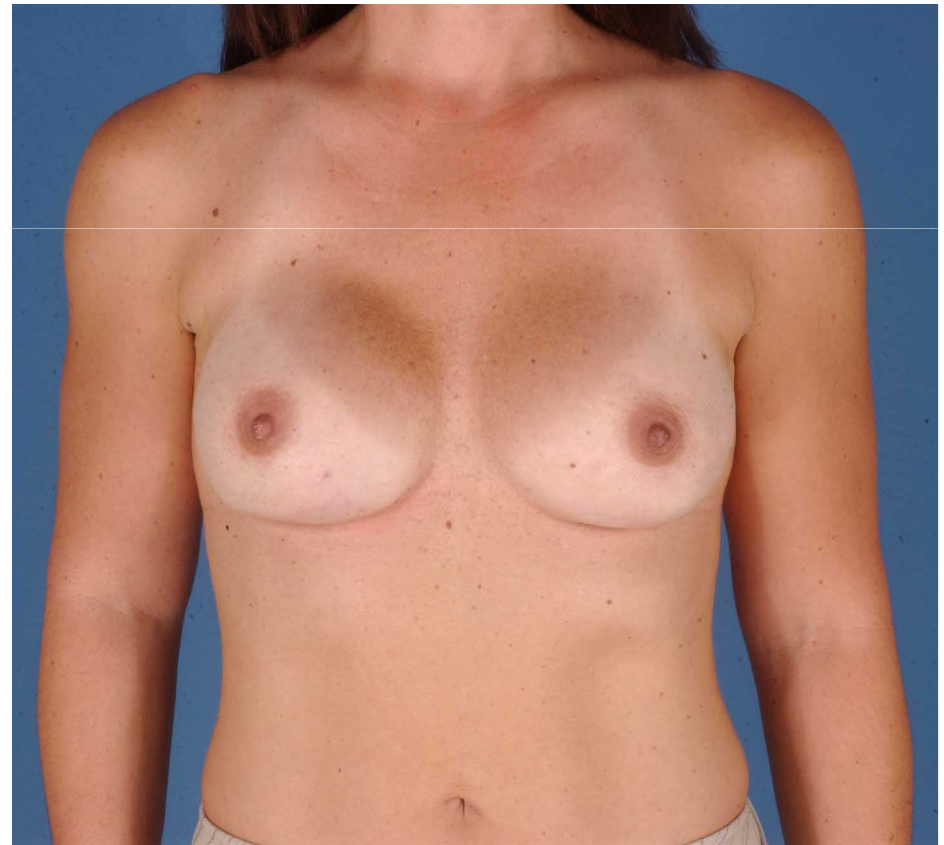
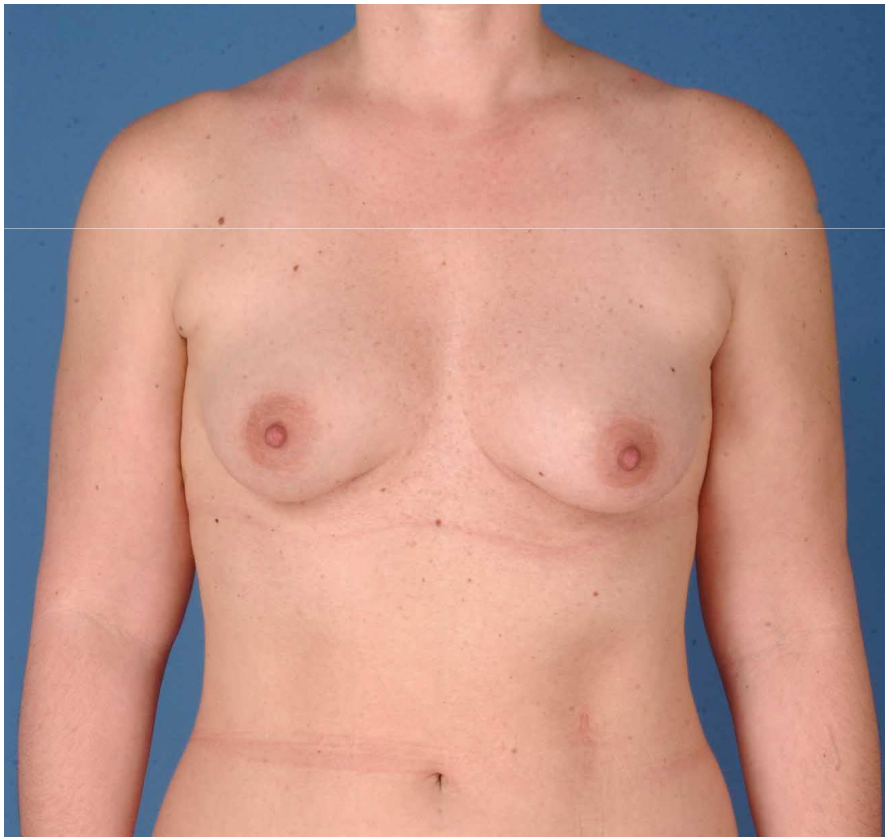
Nipple Sparing Mastectomy

Inferior Incision



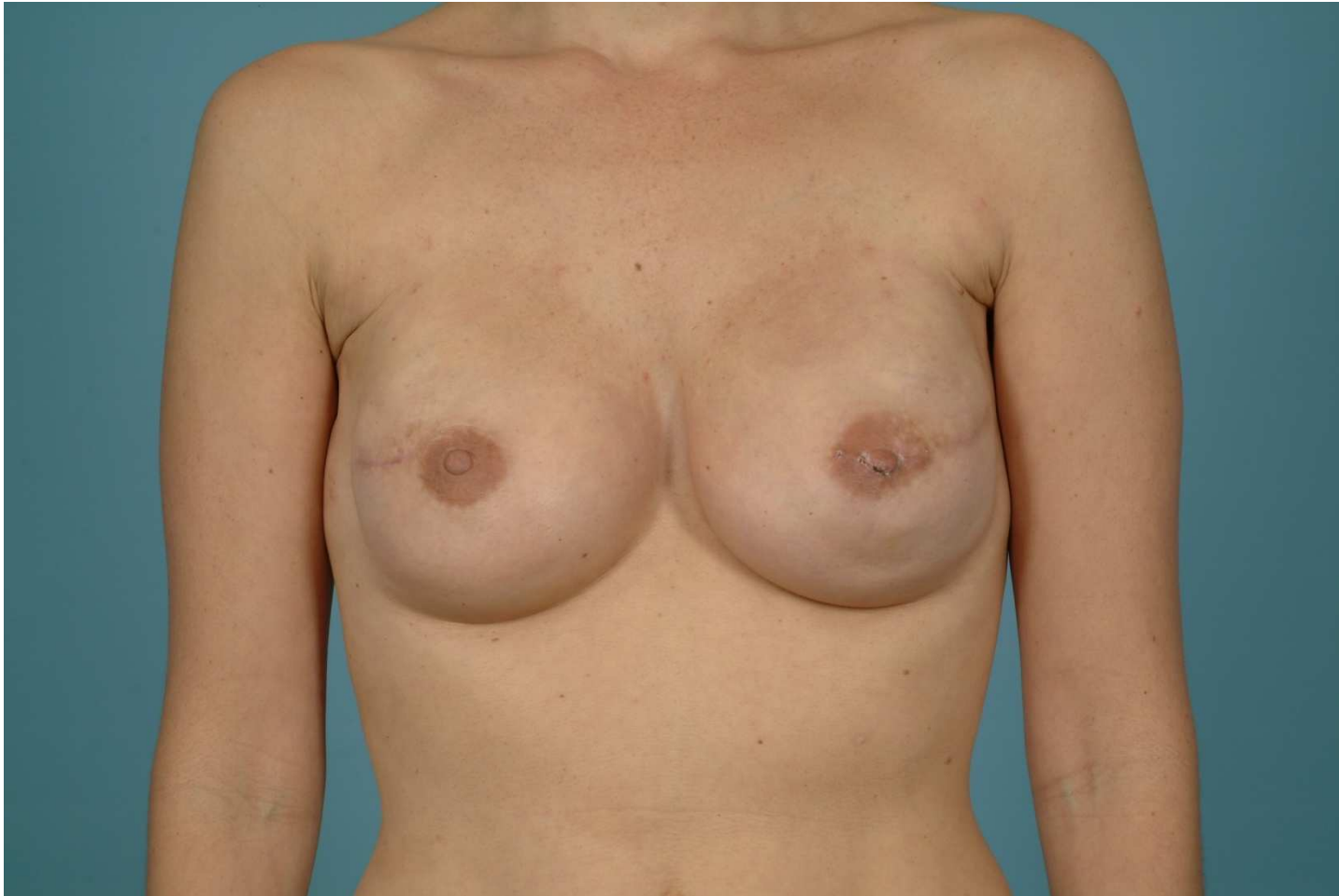
Bilateral Nipple Sparing Mastectomy

Inferior Incision

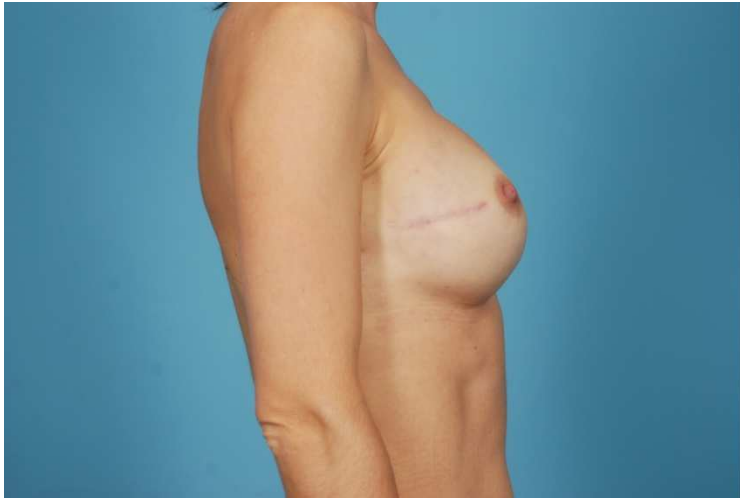


Lateral Breast Excision

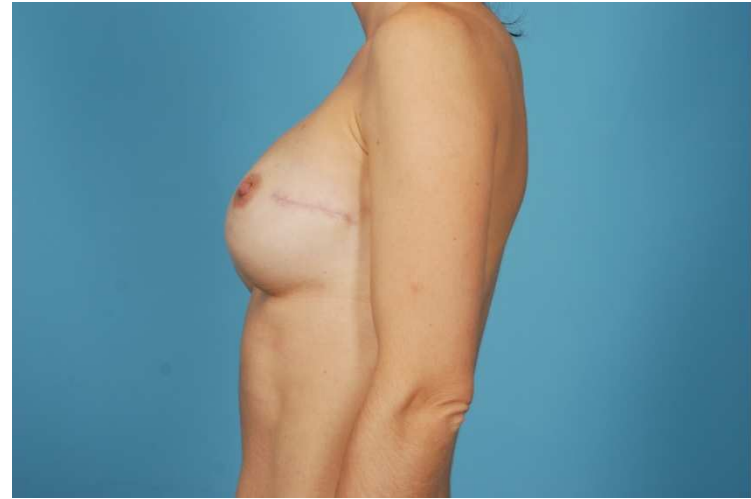
Partial Necrosis of Left Nipple



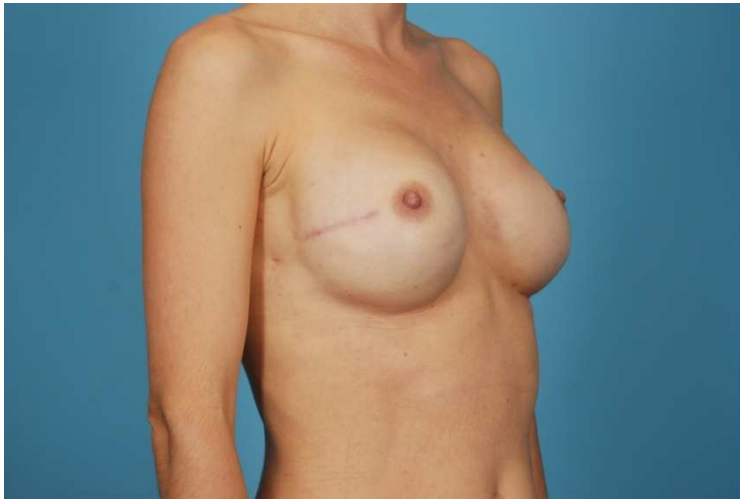




11/18/2009



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11/18/2009

Current NSM Experience MSKCC

353 NSM, 200 patients
196 prophylactic

OR debridement skin necrosis:	3.3%	NAC necrosis:	0.2%
Implant loss:	1%		
Infection:	2%		

Other Questions

- Is there an indication for RT?
 - Data-free zone, but RT does not prevent the development of new cancers
 - Standard indications for PMRT
- Can imaging evaluate residual breast tissue?
 - Data-free zone
 - Low sensitivity for nipple involvement
 - preop, unlikely to be beneficial postop

Conclusions

- The literature on NSM does not allow firm conclusions regarding oncologic safety or superiority of cosmetic outcomes.
- The risk of subsequent cancer after prophylactic NSM in BRCA mutation carriers is unknown.

Conclusions

- Sensation, erectile function, and pigmentation of the NAC are altered after NSM.
- Extent of alteration may be related to amount of breast tissue preserved.

Conclusions

- High-quality studies and long-term follow-up are sorely needed.
- NSM is an option for highly selected patients with favorable cancers, but is NOT the standard of care at this time.
- Patient education regarding risks, uncertainties, and nipple alteration is critical.

MSKCC NSM Criteria (Adopted 2011)

Absolute contraindications

- Clinical suspicion of nipple involvement
- DCIS, invasive cancer or unsampled indeterminate calcifications < 1-2 cm from the nipple
- T4, T3, T2 > 3 cm
- Extensive DCIS necessitating mastectomy

Relative

- Recurrent carcinoma (invasive or DCIS) after BCS + RT

What do I *really* think about NSM?

**It's a great operation for a woman
who doesn't actually need a mastectomy.**



MÓDULO TRATAMENTO LOCAL

**MODERADOR
RUFFO FREITAS JR.**

DISCUSSÃO