PRINCIPLES OF BREAST SURGERY

Dr. Mattia Intra
The author declares no conflict of interest
More surgery

More cure
The maximum tolerable treatment
The most important prognostic factor is the biology of the tumor.
Biological Factors Affecting the Prognosis and Treatment of Cancer

Umberto Veronesi

It is now universally recognized that tumor development depends mainly upon the biological characteristics of the tumor and of the host organism. The prognosis is therefore correlated with these factors. Hence the treatment may vary.
And the biology is genetically predefined.

Molecular portraits of human breast tumours

What decides the future of the patient is the intrinsic metastasizing property of the cancer cell
The tumor curability is related to the risk of distant metastases and the possibility to eliminate them with adequate, personalized and targeted medical therapies.
The anatomical approach

The biological approach
The minimal effective treatment
This conservative principle inspired the entire history of the breast cancer treatment over the time: in the breast, axilla, and RT.
First stage of Revolution in Breast Cancer Treatment

BREAST CONSERVATION

1969
In breast cancer, the extension of local treatment doesn’t cure better the disease or increase the prognosis.
The very familiar six randomized trials and a subsequent series of consensus conferences and meta analyses have clearly demonstrated equivalent survival between BCS and mastectomy.
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.
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.

Figure 1. Crude Cumulative Incidence of Local Recurrences after Radical Mastectomy and Recurrences in the Same Breast after Breast-Conserving Therapy.
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.
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., 
MEVIN DEUTSCH, M.D., EDWIN R. FISHER, M.D., JONG-HYEON JEONG, PH.D., AND NORMAN WOLMARK, M.D.

Figure 2. Disease-free Survival (Panel A), Distant-Disease-free Survival (Panel B), and Overall Survival (Panel C) among 689 Women Treated with Total Mastectomy, 634 Treated with Lumpectomy Alone, and 628 Treated with Lumpectomy plus Irradiation. 
In each panel, the P value above the curves is for the three-way comparison among the treatment groups; the P values below the curves are for the two-way comparisons between lumpectomy alone or with irradiation and total mastectomy.
The best performed and the best reconstructed mastectomy is an irreversible mutilation, sometimes unavoidable, often well accepted by the patients, rarely desired, but it is always a physical mutilation.
Mastectomy affects and modifies sensibility, corporeal image, psychology, sexuality, quality of life of the patients.

Without considering the possible problems related to a caducous and painful foreign body (the prothesis), or more invasive autologous flaps.
Women who underwent mastectomy showed the highest anxious-depressive symptomatology and quality-of-life impairment in comparison to the remaining groups.
The best performed mastectomy would never be comparable to an oncologically and cosmetically well performed conservative surgery.
When the correct indications are followed, BCS achieves better quality of life than mastectomy.
Wrong indication to BCS
Wrong indication to mastectomy
In early breast cancer surgical indications are clear and precise:

• Radical removal of the tumor with adequate resection margins.

• Good cosmetic outcome and acceptable symmetry according to tumor size, breast size and tumor site.
Monica Morrow, N Engl J Medicine 2002

“It is time to declare the case against breast-conserving therapy closed and focus our efforts on new strategies for the prevention and cure of breast cancer.”
Minimizing tumor recurrence in the breast is of major clinical importance, since local recurrence is associated with a great emotional distress.
Predictive factors of local recurrence after BCS

- Age
- Nodal status
- HER2
- High Grade
- Multifocality
- Margin width
- Extensive in situ component
- Triple negative subtype
- Lymphovascular invasion
- Gene profile
- Multicentricity
- Tumor size
Impact of margin status

Margin status is surely a prognostic factor. Involved margins are still associated with a significant increased risk of failure.

This is especially true for patients treated with surgery alone, without adjuvant RT. In patients undergoing RT, the impact of margin status is less clear.
The likelihood of local recurrence is less related to the surgical margin width than to the underlying tumor biology and to the availability of effective adjuvant therapy.

Systemic treatments that reduce the risk of distant metastases also reduce the risk of local recurrence.
The impact of the margin width is probably overestimated. A larger margin is associated with decreased failure risk, but the advantage decreases with increasing width and is small and mostly insignificant.

Margins! Margins. Margins? How Important Is Margin Status in Breast-Preserving Therapy?

Jürgen Dunst  Kathrin Dallas

Universitätsklinikum Schleswig-Holstein, Campus Lübeck, Klinik für Strahlentherapie, Lübeck, Germany

<table>
<thead>
<tr>
<th>Margin Status</th>
<th>Impact on local tumor recurrence rate, hazard ratio (confidence interval)</th>
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<tbody>
<tr>
<td>&gt; 1 mm versus ≤ 1 mm</td>
<td>0.69 (CI: 0.28–1.69), n.s.</td>
</tr>
<tr>
<td>&gt; 2 mm versus ≤ 2 mm</td>
<td>0.90 (CI: 0.44–1.84), n.s.</td>
</tr>
</tbody>
</table>

Population-based analysis from Manitoba: Hardy et al. 2008 [21].
CI = Confidence interval, n.s. = not significant.
The use of no ink on tumor as the standard for an adequate margin in invasive cancer in the era of multidisciplinary therapy is associated with low rates of IBTR, has the potential to decrease re-excision rates, improve cosmetic outcomes, and decrease health care costs.
Oncoplastic surgery
Inferior quadrants: unfavourable tumor site
Large tumors
The same conservative concept moved over the time to cover other fields of investigation (locoregional nodes, radiotherapy), with similar conclusions.
Second stage of Revolution in Breast Cancer Treatment

CONSERVATION OF AXILLARY LYMPH NODES

SENTINEL NODE BIOPSY
Sentinel Lymph Node

Is, by definition, the first node or nodes directly draining the lymph from breast carcinoma area.
Sentinel Lymph Node
Is a easily identifiable node that represents the overwhelmingly most likely site of metastasis.
The widespread adoption of SLNB was supported by the results of at least 90 observational studies, 12 randomized trials, 6 meta-analyses, 2 ASCO guidelines, and an extensive literature covering all aspects of the procedure.
A Randomized Comparison of Sentinel-Node Biopsy with Routine Axillary Dissection in Breast Cancer

Umberto Veronesi, M.D., Giovanni Paganelli, M.D., Giuseppe Viale, F.R.C.Path., Alberto Luini, M.D., Stefano Zurrida, M.D., Viviana Galimberti, M.D., Mattia Intra, M.D., Paolo Veronesi, M.D., Chris Robertson, Ph.D., Patrick Maisonneuve, Eng., Giuseppe Renne, M.D., Concetta De Cicco, M.D., Francesca De Lucia, M.D., and Roberto Gennari, M.D.

**Figure 1.** Cumulative Incidence of Events Associated with Breast Cancer in the Two Study Groups.

**Figure 2.** Overall Survival in the Two Study Groups.
Follow up 95.6 months

No difference in OS, DFS and LC between conventional axillary-lymph-node dissection and sentinel lymph node biopsy

Krag DN, Anderson SJ, Julian TB, et al
Sentinel Lymph Node biopsy is the gold standard procedure to stage the axilla in the operable breast cancer with clinically negative axillary nodes.
Sentinel Lymph Node

Gold Standard

Simple, safe and reliable
Reproducible
High predictive value
Low false negative rate
The acceptance of the SLNB was one of the great success stories in contemporary surgical oncology.
Sentinel Lymph Node

“Is sufficiently robust to withstand variations in technique, increases staging accuracy by allowing enhanced pathologic analysis, has less morbidity than complete axillary lymph node dissection, and gives local control comparable of that of axillary dissection”

Sentinel node biopsy for breast cancer: does anybody not need one?
Cody HS 3rd, Ann Surg Oncol 2003
Sentinel Lymph Node
Works well in a wide range of practice settings
SLNB in large tumors (T2-T3)

Cody HS 3rd
SLN biopsy for large and/or multicentric breast cancers: should we worry?

Eur J Surg Oncol 2011; 37(5): 386-7
SLN biopsy in multifocal and multicentric breast tumor


SLN biopsy before neoadjuvant chemotherapy

Sentinel-lymph-node biopsy in patients with breast cancer before and after neoadjuvant chemotherapy (SENTINA): a prospective, multicentre cohort study

Thorsten Kuehn, Ingo Bauerfeind, Tanja Fehm, Barbara Fleige, Maik Hausschild, Gisela Helms, Annette Lebeau, Cornelia Liedtke, Guntar von Minckwitz, Valentina Nekljudova, Sabine Schmatloch, Peter Schrenk, Annette Staebler, Michael Untch

www.thelancet.com/oncology Published online May 15, 2013 http://dx.doi.org/10.1016/S1470-2045(13)70166-9
SLN biopsy after neoadjuvant chemotherapy

<table>
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<tr>
<th>Reference</th>
<th>N° pts.</th>
<th>Id. rate</th>
<th>NPV</th>
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<td>79</td>
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<td>92%</td>
<td>98%</td>
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<td>Gimbergues 2008</td>
<td>129</td>
<td>94%</td>
<td>89%</td>
<td>93%</td>
</tr>
<tr>
<td>Lee 2007</td>
<td>219</td>
<td>78%</td>
<td>87%</td>
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<td>Shen 2007</td>
<td>69</td>
<td>93%</td>
<td>62%</td>
<td>68%</td>
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<td>Kinoshita 2006</td>
<td>77</td>
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<td>94%</td>
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<td>Mamounas 2005</td>
<td>428</td>
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<td>93%</td>
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<td>70</td>
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<td>97%</td>
<td>98%</td>
</tr>
<tr>
<td>Lang 2004</td>
<td>52</td>
<td>88%</td>
<td>96%</td>
<td>98%</td>
</tr>
<tr>
<td>Tio 2004</td>
<td>89</td>
<td>87%</td>
<td>96%</td>
<td>98%</td>
</tr>
</tbody>
</table>
SLN biopsy after neoadjuvant chemotherapy
With clinically negative axillary nodes at presentation or metastatic nodes but complete response after medical treatment

Accuracy of sentinel lymph node biopsy after neo-adjuvant chemotherapy in patients with locally advanced breast cancer and clinically positive axillary nodes

G. Canavese a, B. Dozin b,*, C. Vecchio a, D. Tomei a, G. Villa c, F. Carli d, L. Del Mastro e, A. Levaggi e, C. Rossello e, S. Spinaci e, P. Bruzzi b, A. Catturich a

aSurgical Senology Unit, National Cancer Research Institute, Genova, Italy
bClinical Epidemiology Unit, National Cancer Research Institute, Largo Rossana Benzi, 10, 16132 Genova, Italy
cDepartment of Nuclear Medicine, A.O.U San Martino, Genova, Italy
dAnatomy and Pathological Cytohistology Unit, National Cancer Research Institute, Genova, Italy
eMedical Oncology A Unit, National Cancer Research Institute, Genova, Italy
fPlastic and Reconstructive Surgery Unit, National Cancer Research Institute, Genova, Italy

EJISO 37 (2011) 688–694
# SLN biopsy after negative sentinel node

<table>
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<th>Reference</th>
<th>Year</th>
<th>N° Pts.</th>
<th>Success rate</th>
<th>Extra axillary drainage</th>
<th>Positive Sec SLN</th>
<th>F.up</th>
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<tr>
<td>Intra</td>
<td>2015</td>
<td>212</td>
<td>97.7%</td>
<td>8.0%</td>
<td>16.8%</td>
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<tr>
<td>Cox</td>
<td>2008</td>
<td>56</td>
<td>80%</td>
<td>2.2%</td>
<td>20%</td>
<td>2.2 y</td>
</tr>
<tr>
<td>Port</td>
<td>2007</td>
<td>54</td>
<td>74%</td>
<td>7.5%</td>
<td>12.5%</td>
<td>2.2 y</td>
</tr>
<tr>
<td>Taback</td>
<td>2006</td>
<td>6</td>
<td>88%</td>
<td>40%</td>
<td>0%</td>
<td>3.1 y</td>
</tr>
</tbody>
</table>

SLNB in patients with previous aesthetic surgery: The EIO experience

100% SLN identification rate
32% metastatic SLNs
SLN biopsy in pregnant women

The safety of lymphatic mapping in pregnant breast cancer patients using Tc-99m sulfur colloid.
Breast J 2004;10:492-95

Organ and fetal absorbed dose estimates from 99mTc-sulfur colloid lymphoscintigraphy and sentinel node localization in breast cancer patients.
J Nucl Med 2006;47:1202-08

Sentinel lymph node biopsy in pregnant patients with breast cancer.
SLN biopsy in male breast cancer

Gennari R, Renne G, Travaini L, Bassi F, Zurrida S.

Sentinel Lymph Node Biopsy is Successful and accurate in Male Breast Carcinoma.
J Am Coll Surg 2008;206:616-21
An axillary dissection for uninvolved axillary lymph nodes must be considered inappropriate.

Unnecessary axillary node dissection in the SLN era
Intra M et al, Eur J Cancer 2007
The SLN biopsy era
The removal of non metastatic axillary nodes

Surgical and oncologic failure
Axillary dissection versus no axillary dissection in patients with sentinel-node micrometastases (IBCSG 23–01): a phase 3 randomised controlled trial


April 2001 to February 2010
934 randomized from 27 centers;

Lancet Oncology 2013;14(4): 297-305
Axillary Dissection vs No Axillary Dissection in Women With Invasive Breast Cancer and Sentinel Node Metastasis
A Randomized Clinical Trial

Figure 2. Survival of the ALND Group Compared With SLND Alone Group

ALND indicates axillary lymph node dissection; SLND, sentinel lymph node dissection.
Radiotherapy or surgery of the axilla after a positive sentinel node in breast cancer (EORTC 10981-22023 AMAROS): a randomised, multicentre, open-label, phase 3 non-inferiority trial

Mila Donker, Geertjan van Tienhoven, Marieke E Straver, Philip Meijsen, Cornelis J H van de Velde, Robert E Mansel, Luigi Cataliotti, A Helen Westenberg, Jean H G Klinkenbijl, Lorenzo Ozalesi, Willem H Bouma, Huub C J van der Mijle, Grard A P Nieuwenhuijzen, Sonne C Veltkamp, Leon Staets, Nicole J Duez, Peter W de Graaf, Thijs van Dalen, Andreas Marinelli, Herman Rijna, Marko Snoj, Nigel J Hundred, Jos W S Merkus, Yazid Belfakemi, Patrick Petignat, Dominic A X Schinagl, Cornel Coens, Carlo G M Messina, Jan Bogaerts, Emiel J T Rutgers

Summary

Background  If treatment of the axilla is indicated in patients with breast cancer who have a positive sentinel node, axillary lymph node dissection is the present standard. Although axillary lymph node dissection provides excellent regional control, it is associated with harmful side-effects. We aimed to assess whether axillary radiotherapy provides comparable regional control with fewer side-effects.
Editorial

POSNOC: A Randomised Trial Looking at Axillary Treatment in Women with One or Two Sentinel Nodes with Macrometastases

A. Goyal *, D. Dodwell †

* Royal Derby Hospital, Derby, UK
† St James Hospital, Leeds, UK

Received 7 July 2015; accepted 17 July 2015
Third stage of Revolution in Breast Cancer Treatment: Reduction of Radiotherapy

1999

ELIOT (ELECTRON INTRA OPERATIVE THERAPY)

Full dose (21 Gy) or BOOST (12 Gy) administered in three minutes
Partial breast irradiation (PBI)

Conformational 3D

Mammosite

Braquitherapy
Intraoperative radiotherapy with electrons (ELIOT)
## ASTRO Consensus Statement 2009

<table>
<thead>
<tr>
<th>Factors</th>
<th>“Suitable” group</th>
<th>“Cautionary” group</th>
<th>“Unsuitable” group</th>
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<td>Patient factors</td>
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<td>Age, y</td>
<td>≥60</td>
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<td>BRCA1/2 mutation</td>
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<td>Present</td>
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<tr>
<td>Tumor size, cm</td>
<td>≤2†</td>
<td>2.1–3.0†</td>
<td>&gt;3†</td>
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<td>T stage</td>
<td>T1</td>
<td>T0 or T2</td>
<td>T3 or T4</td>
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<td>Margins</td>
<td>Negative by at least 2 mm</td>
<td>Close (&lt;2 mm)</td>
<td>Positive</td>
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<td>Grade</td>
<td>Any</td>
<td>NA</td>
<td>NA</td>
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<td>LVSI</td>
<td>No‡</td>
<td>Limited/focal</td>
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<td>Negative§</td>
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<td>If present</td>
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<td>Multifocality</td>
<td>Clinically unifocal with total size ≤2 cm‖</td>
<td>Clinically unifocal with total size 2.1 to 3.0 cm‖</td>
<td>If microscopically multifocal &gt;3 cm in total size or if clinically multifocal</td>
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<td>Histology</td>
<td>Invasive ductal or other favorable subtypes**</td>
<td>Invasive lobular</td>
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<td>≤ 3 cm in size</td>
<td>If &gt;3 cm in size</td>
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<td>If &gt;3 cm in size</td>
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<td>NA</td>
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<td>Nodal factors</td>
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<tr>
<td>N stage</td>
<td>pN0 (i−, i+)</td>
<td>NA</td>
<td>pN1, pN2, pN3</td>
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<td>Nodal surgery</td>
<td>SN Bx or ALND‡‡</td>
<td>NA</td>
<td>None performed</td>
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<td>Treatment factors</td>
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<td>Neoadjuvant therapy</td>
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# GEC-ESTRO Recommendations 2009

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<td><strong>Patient age</strong></td>
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<td>&gt;40-50 years</td>
<td>≤40 years</td>
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<td>IDC, ILC, mucinous, tubular, medullary, and colloid cc.</td>
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<td><strong>ILC</strong></td>
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<td>pT1-2 (≤30 mm)</td>
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<td>Unicentric</td>
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<td>Present</td>
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<tr>
<td><strong>Nodal status</strong></td>
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<td>pN1mi, pN1a (by ALND*)</td>
<td>pNx; ≥pN2a</td>
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<td><strong>Neoadj. chemoth.</strong></td>
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<td>Not allowed</td>
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</table>

*SLNB: Sentinel lymph node biopsy; ALND: Axillary lymph node dissection*
Special Article

Accelerated Partial Breast Irradiation: Executive summary for the update of an ASTRO Evidence-Based Consensus Statement

Candace Correa MD, Eleanor E. Harris MD, Maria Cristina Leonardi MD, Benjamin D. Smith MD, Alphonse G. Taghian MD PhD, Alastair M. Thompson MD, Julia White MD, Jay R. Harris MD

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bDepartment of Radiation Oncology, East Carolina University, Greenville, North Carolina
cDepartment of Radiation Oncology, European Institute of Oncology, Milan, Italy
dDepartment of Radiation Oncology, The University of Texas MD Anderson Cancer Center, Houston, Texas
eDepartment of Radiation Oncology, Massachusetts General Hospital, Boston, Massachusetts
fDepartment of Breast Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, Texas
gDepartment of Radiation Oncology, Ohio State University Cancer Center, Columbus, Ohio
hDepartment of Radiation Oncology, Brigham and Women’s Hospital and Dana-Farber Cancer Institute, Boston, Massachusetts

Practical Radiation Oncology 2016
<table>
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<th>Patient group</th>
<th>Risk factor</th>
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<td>T stage</td>
<td>T1</td>
<td>Tis or T1</td>
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<td>• Low to intermediate nuclear grade</td>
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<td>Age</td>
<td>50-59 y</td>
<td>• 40-49 y if all other criteria for &quot;suitable&quot; are met</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ≥50 y if patient has at least 1 of the pathologic factors below and does not have any &quot;unsuitable&quot; factors</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pathologic factors:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Size 2.1-3.0 cm&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• T2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Close margins (&lt;2 mm)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Limited/focal LVSI</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• ER(-)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Clinically unifocal with total size 2.1-3.0 cm&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Invasive lobular histology</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Pure DCIS ≤3 cm if criteria for &quot;suitable&quot; not fully met</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• EIC ≤3 cm</td>
</tr>
<tr>
<td></td>
<td>Margins</td>
<td>Close (&lt;2 mm)</td>
<td>No change</td>
</tr>
<tr>
<td></td>
<td>DCIS</td>
<td>≤3 cm</td>
<td>≤3 cm and does not meet criteria for “suitable”</td>
</tr>
<tr>
<td>Unsuitable</td>
<td>Age</td>
<td>&lt;50 years</td>
<td>• &lt;40 y</td>
</tr>
<tr>
<td></td>
<td>Margins</td>
<td>Positive</td>
<td>40-49 y and do not meet the criteria for cautionary</td>
</tr>
<tr>
<td></td>
<td>DCIS</td>
<td>&gt;3 cm</td>
<td>No change</td>
</tr>
</tbody>
</table>

<sup>a</sup> The size of the invasive tumor component.

<sup>b</sup> Microscopic multifocality allowed, provided the lesion is clinically unifocal (a single discrete lesion by physical examination and ultrasonography/mammography) and the total lesion size (including foci of multifocality and intervening normal breast parenchyma) falls between 2.1 and 3.0 cm.
Conclusions

➢ PBI shouldn’t be considered a totally substitutive technique but a complementary approach to WBRT.
➢ To achieve the higher efficacy of the procedure the most important things are a precise radio-surgical technique and a careful selection of the patients.
Fourth stage of Revolution in Breast Cancer Treatment

CONSERVATIVE MASTECTOMY
Evolution of mastectomy

- **Total mastectomy**
  - Parenchyma
  - NAC
  - Skin

- **Skin Sparing Mastectomy**
  - Parenchyma
  - NAC

- **Nipple sparing Mastectomy**
  - Parenchyma
Evolution of mastectomy
Oncological safety

Complete removal of the tumour with the entire breast parenchima

Cosmetic outcome

saving breast appearance, better quality of life
This procedure is usually performed through a radial incision where the skin is carefully dissected off the breast until all anatomic boundaries of the breast are reached and the gland in its entirety is excised.
Nipple-sparing mastectomy must be carried out with **maximum attention** not to leave macroscopic residues of mammary gland in particular in the axillary extension, peripheral extremities of the gland and the nipple-areola complex; it is necessary to perform an accurate dissection and a meticulous preparation of the skin flaps and of the areola-nipple complex which must be reasonably thin without however compromising its vitality.
Surgical patterns

- Radial
- Periareolar inferior
- Round Block
- Vertical pattern
- Wise pattern
- Inframammary fold
Radial Incision
PERIAREOLO INFERIOR
VERTICAL PATTERN
WISE PATTERN
Inframammary fold
In the absence of contraindications, all patients should be candidates for breast reconstruction in order to minimize the negative physical and psychological impact of the mastectomy; the breast reconstruction should preferably be immediate, performed at the same time of the prophylactic mastectomy, by a team of dedicated plastic surgeons, or with permanent prosthesis or autologous tissues.
Robotic Nipple Sparing Mastectomy and Immediate Robotic Reconstruction with Implant

Toesca A. ANN SURG 2014

Robotic nipple-sparing mastectomy for the treatment of breast cancer: Feasibility and safety study

Toesca A et al. 2016
Randomized prospective study comparing "Nipple-sparing" mastectomy vs robotic nipple-sparing mastectomy for patient satisfaction
THE CENTRALITY OF THE PATIENT

PERSONALIZED MEDICINE

- Provide (comprehensible) information to the patient
- Consider the needs, values and expectations of the patient
- Promote shared decisions with the patient

BREAST CANCER TREATMENTS

from
Maximum tolerable treatment
to
Minimum effective treatment
“What our breast cancer patients most need is better science, not more surgery.”

Hiram S. Cody III.
Ann Surg Oncol 2012