

CHANGING PARDIGMS IN BREAST SURGERY

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New Paradigms

- From
- Anatomical concept of cancer spread

- To
- Biological concept of cancer spread

- From
- Aggressive radio-surgery

- To
- Targeted conservative treatments

MASTECTOMY vs CONSERVATION

INDICATIONS FOR MASTECTOMY

- Inability to obtain radiation therapy
- Multicentricity
- Multifocality
- Large operable cancers , unfit for radiation
- ?BRCAness
- Skin involvement

ARE THESE ABSOLUTE OR OBSELETE?……

DEFINITIONS

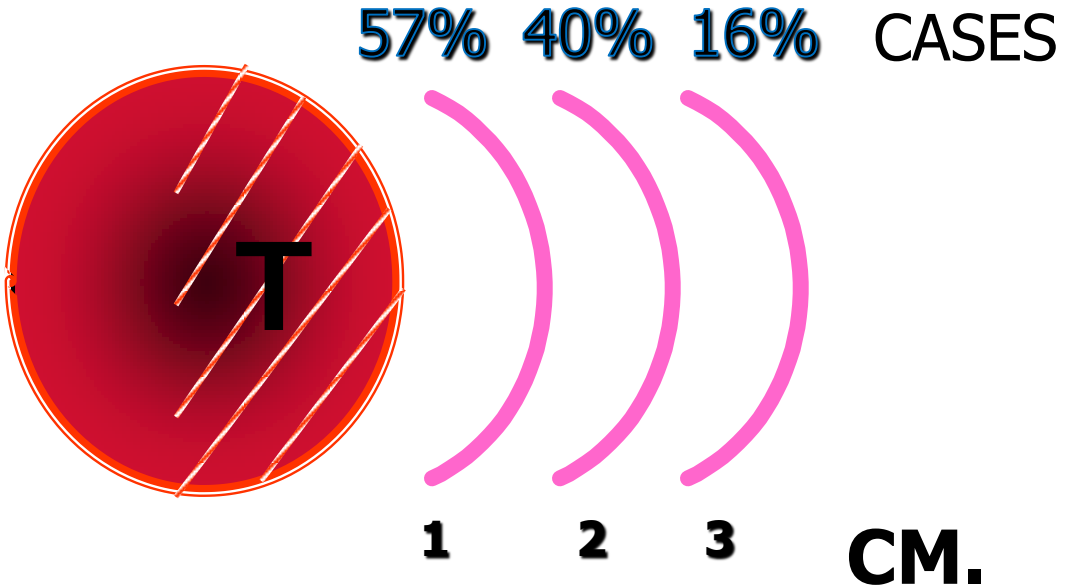
- Multicentricity-

Two or more foci of cancer in different quadrants of the same breast

- Multifocality-

two or more foci of cancer in the same breast quadrant

Margin positivity is conditioned by the extent of breast resection.



>40% of specimen showed invasive foci at >2cm from the primary

Holland 1985

TRADITIONAL PARADIGM

- Multicentric (MC) & Multifocal(MF) Breast Cancer are regularly considered a relative contraindication for Breast Conserving Therapy (BCT)

THE REASONING

- Perceived higher risk for in-breast recurrence since it is assumed that in MF/MC cancer the risk of more invasive foci in the breast is greater and radiotherapy less effective
- Bad cosmetic results –wider excisions/ multiple wide excisions and larger boost volumes with more fibrosis

MRI

The use of MRI is associated with increased Mastectomy rates.

Most Likely due to extra findings: considered to be MC or MF disease

Houssami N, Morrow M et al

Pre-operative magnetic resonance imaging in breast cancer:meta analysis of surgical outcomes. Ann Surg. 2013

THE EVIDENCE ?

Is MF/MC disease associated with worse disease free and overall survival?

Is BCT in MF/MC disease associated with higher local relapse rates?

- Multicentric (MC) & Multifocal(MF) Breast Cancer are regularly considered a relative contraindication for Breast Conserving Therapy (BCT)

Vera-Badillo et al

Effect of multifocality and multicentricity on outcome in early stage breast cancer. BCRT. 2014

N= 67,557

22 studies

9.5% MF/MC

	Multifocal/ Multicentric (%)	Unifocal (%)	P
N patients	6,565	62,326	
Premenopausal	15	5.3	0.003
Postmenopausal	23	12	
unknown	62	82	
Histology			
Ductal	55	55	0.006
Lobular	8.5	0.2	
Mixed	0.5	4.1	
OTHER	36	41	
Tumour size			
T1	29	31	<0.001
T2	16	17	
T3	28	1.9	

Vera-Badillo e

Effect of mul *cancer. BCRT. 2014*

MF/MC versus unifocal

Treatment modality	Multifocal/ Multicentric (%)	Unifocal (%)	P
Breast Conserving Surgery	26	54	<0.001
Chemotherapy	26	20	<0.001
Radiotherapy	11	6.9	<0.001
Hormone therapy	30	27	<0.001

Vera-Badillo et al

Effect of multifocality and multicentricity on outcome in early stage breast cancer. BCRT. 2014

MF/MC versus unifocal

Conclusion

"Multifocality appears to be associated with a worse prognosis, however, substantial inter-study heterogeneity limits the precise determination of increased risk. Further validation of the independent prognostic impact of multifocality is warranted"

Vera-Badillo et al

Effect of multifocality and multicentricity on outcome in early stage breast cancer. BCRT. 2014

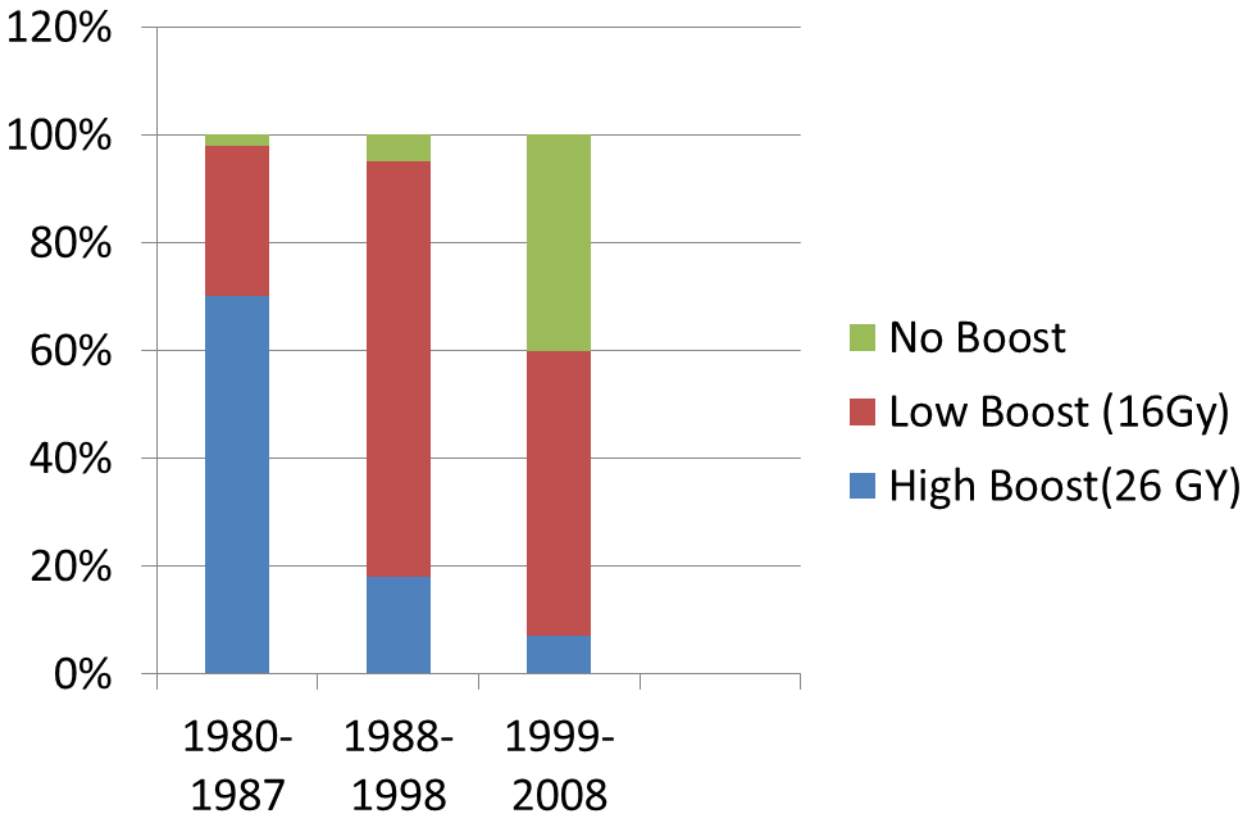
Netherlands Cancer Institute (NKI-AVL)

N= 8507

1980-2008

BCT

RADIOTHERAPY (RT) IN THE NKI-AVL


120%
100%
80%
60%
40%
20%
0%
1980-1987
1988-1998
1999-2008
No Boost
Low Boost (16Gy)
High Boost(26 GY)

Increased use of adjuvant systemic therapy

	1980-1987	1988-1998	1999-2008
SYSTEMIC THERAPY	203 (19%)	1479 (41%)	1959 (51%)
HORMONAL	35 (3%)	1031 (28%)	1510 (40%)
CHEMOTHERAPY	172 (16%)	557 (15%)	1138 (30%)
Node-negative patienys	11 (6%)	292 (22%)	615 (36%)

NKI –AVL, 1988-2008

Netherlands Cancer Institute (NKI-AVL)

417 patients with local recurrence (LR)

5 yrs LR-rate: 2%

10 yrs LR-rate: 5%

Data now online: Ann Surg Oncol – 2/2015 – open access
The Breast (in press)

Systematization of Oncoplastic Surgery: Selection of Surgical Techniques and Patient-Reported Outcome in a Cohort of 1,035 Patients

Mahdi Rezai, Sarah Knispel, Stephanie Kellersmann, Hildegard Lax, Rainer Kimmig & Peter Kern

Annals of Surgical Oncology

ISSN 1068-9265

Ann Surg Oncol
DOI 10.1245/s10434-015-4396-4



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THE BREAST

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Official Journal of the Breast Centres Network



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Oncoplastic Study (Rezai M- Kern P), n= 1035, 2004-2009, (follow-up: 5,2 years)

Analysis of recurrence according to ...

- tumor size
- histopathology
- grading
- intrinsic subtype
- age
- surgical technique

Oncoplastic Study (Rezai, Kern), n= 1035, 2004-2009, (follow-up: 5,2 years)

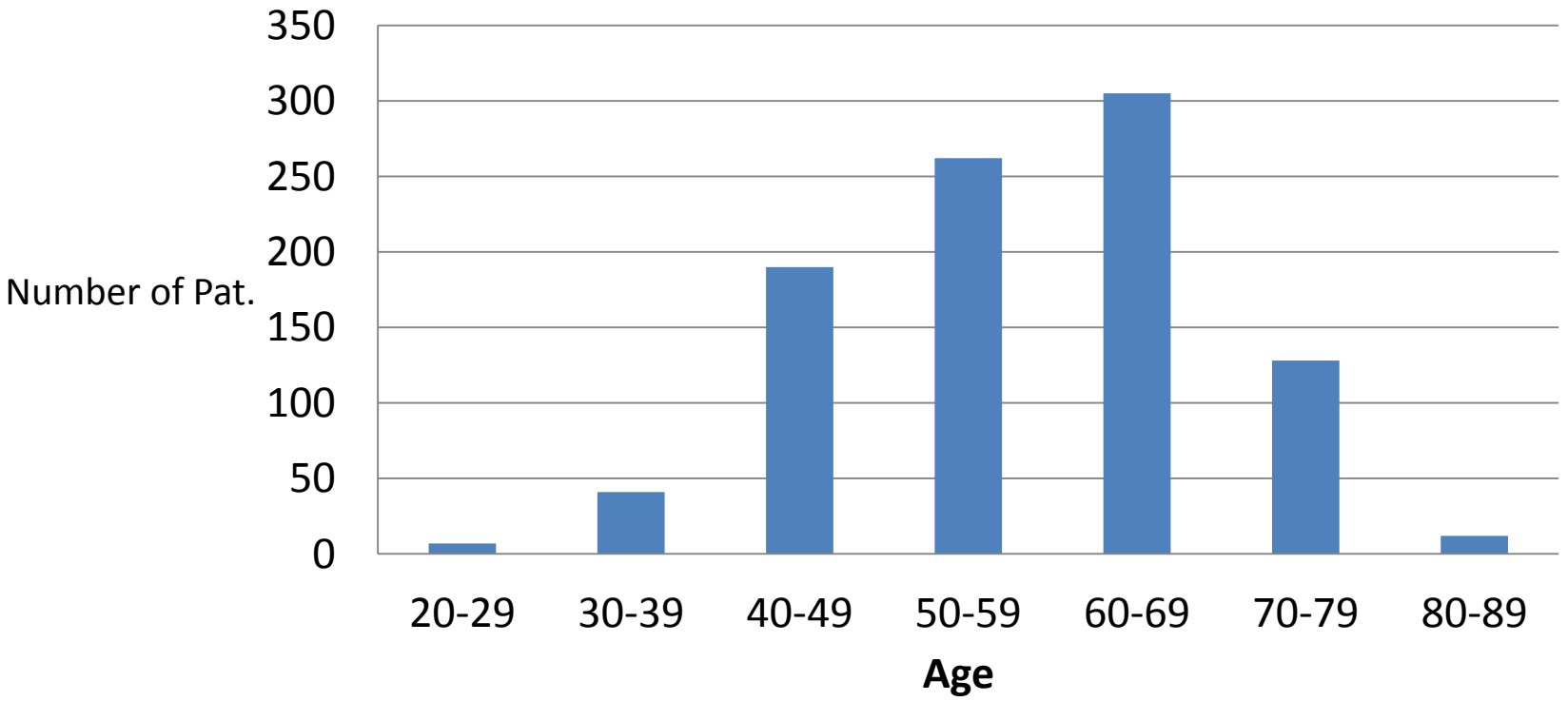
Analysis of aesthetic result and pat.satisfaction according to

- tumor location
- surgical technique
- resection volume
- age
- BMI

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Cohort: n= 1035 patients, eligible for analysis: n= 944 patients

Age at diagnosis (average): 57.6 years (median 58 years)



Rezai M- Kern P- Annals Surgical of oncology 2015

Outcome (Recurrence) in the cohort

- Out of 944 patients, 38 experienced a recurrence
- → 5-years-recurrence rate 4,0%

- recurrence rate in correlation with the age at time of surgery:

< 40 years:	8,3%
40-49 years:	4,8%
50-59 years:	3,1%
60-69 years:	3,9%
> 70 years:	3,6%

Rezai M- Kern P- Annals Surgical of oncology 2015

Recurrence rate – correlated with histopathology

- **Non-invasive lesions had the highest recurrence rate**
  - → **DCIS: 6,7%**

- **Ductal invasive and lobular histology did not differ in recurrence rate**
  - → **invasiv-duktal: 3,5%**
  - → **invasiv-lobulär: 3,6%**

no difference in outcome – ductal or lobular histology!

Rezai M- Kern P- Annals Surgical of oncology 2015

Margin status and re-excision-rate

11.4% (108/944) with unclear margins at 1st surgery

10.2% (11/108) of patients did not undergo a re-excision.

No recurrence were seen in these patients at 5,2 years.

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Rezai M- Kern P- Annals Surgical of oncology 2015

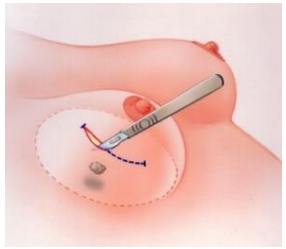
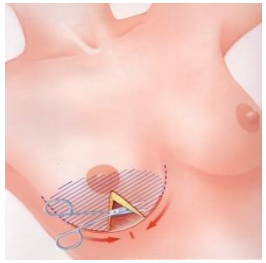
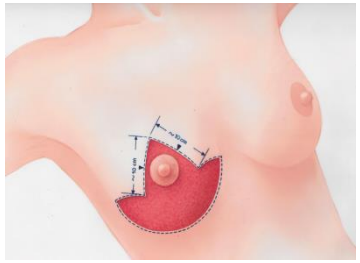
Oncoplastic techniques

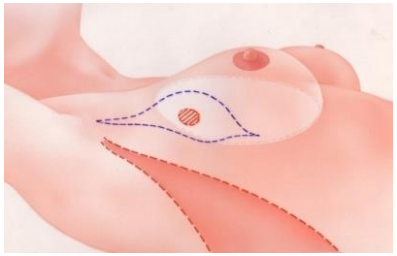
Oncoplastic Surgery

- Combining lumpectomy or quadrantectomy with local or regional tissue rearrangement so that the breast should be conserved and reshaped to avoid significant deformity



Five major principles of Oncoplastic techniques



GLANDULAR ROTATION

DERMO GLANDULAR ROTATION

TUMOR ADAPTED REDUCTION MAMMOPLASTY

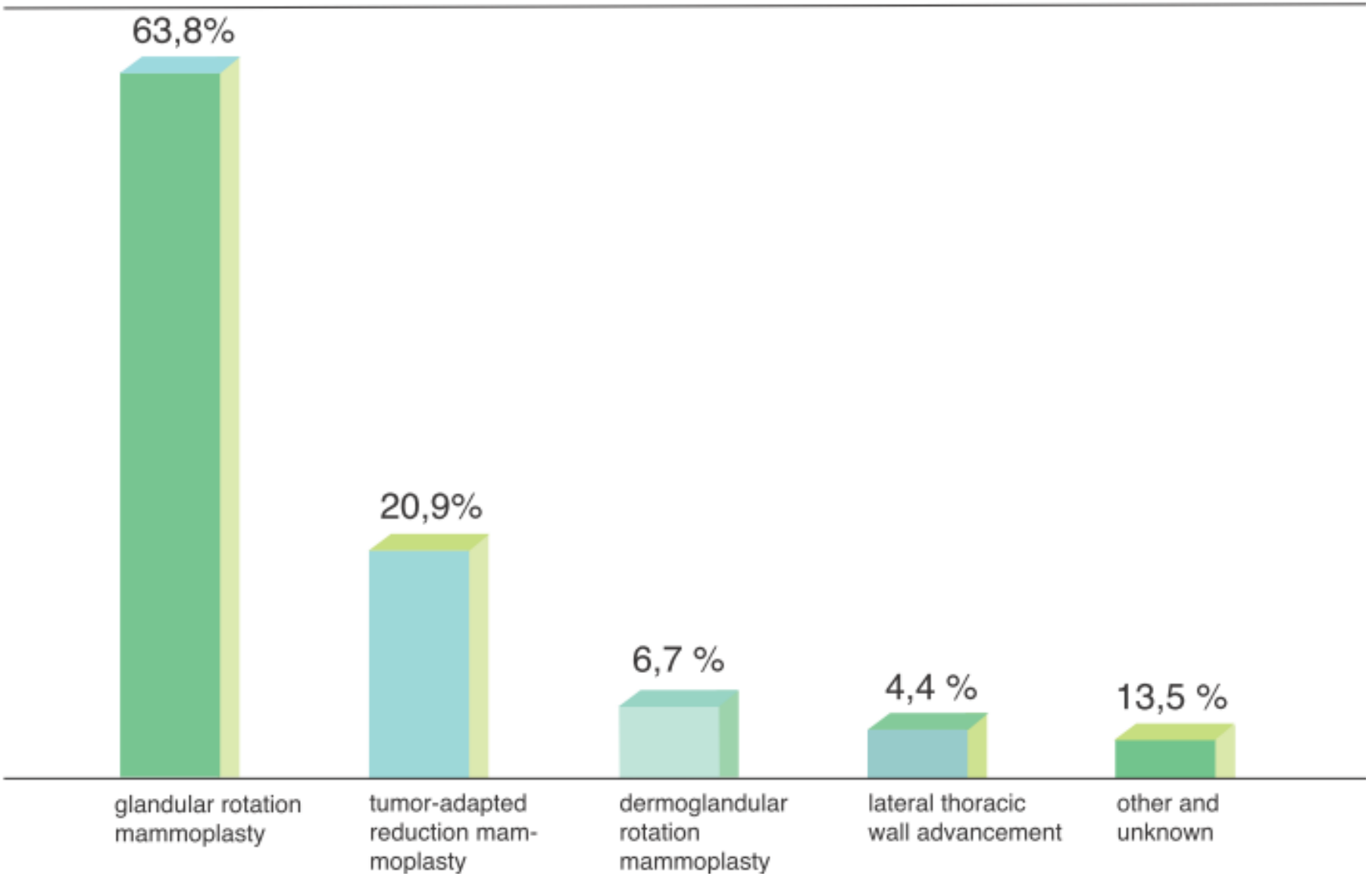
BCT – THORACO EPIGASTRIC FLAP (TEF)

BCT – ADVANCEMENT FLAP

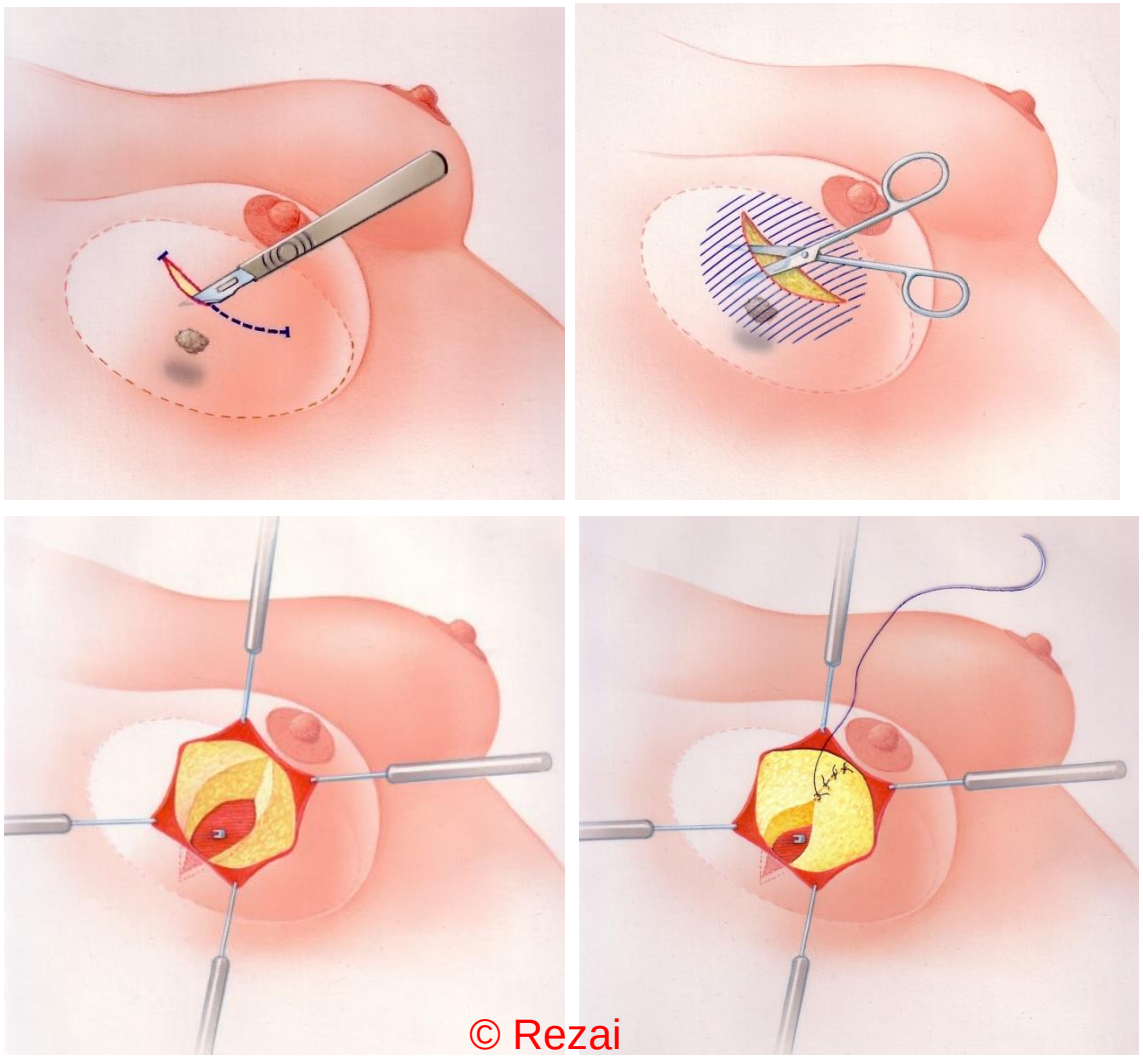
Rezai M, Veronesi U. Oncoplastic principles in breast surgery. Breast Care 2007;2:277-278

Rezai M- Kern P- Annals Surgical of oncology 2015

Frequency of surgical techniques



Glandular Rotation 63.8%

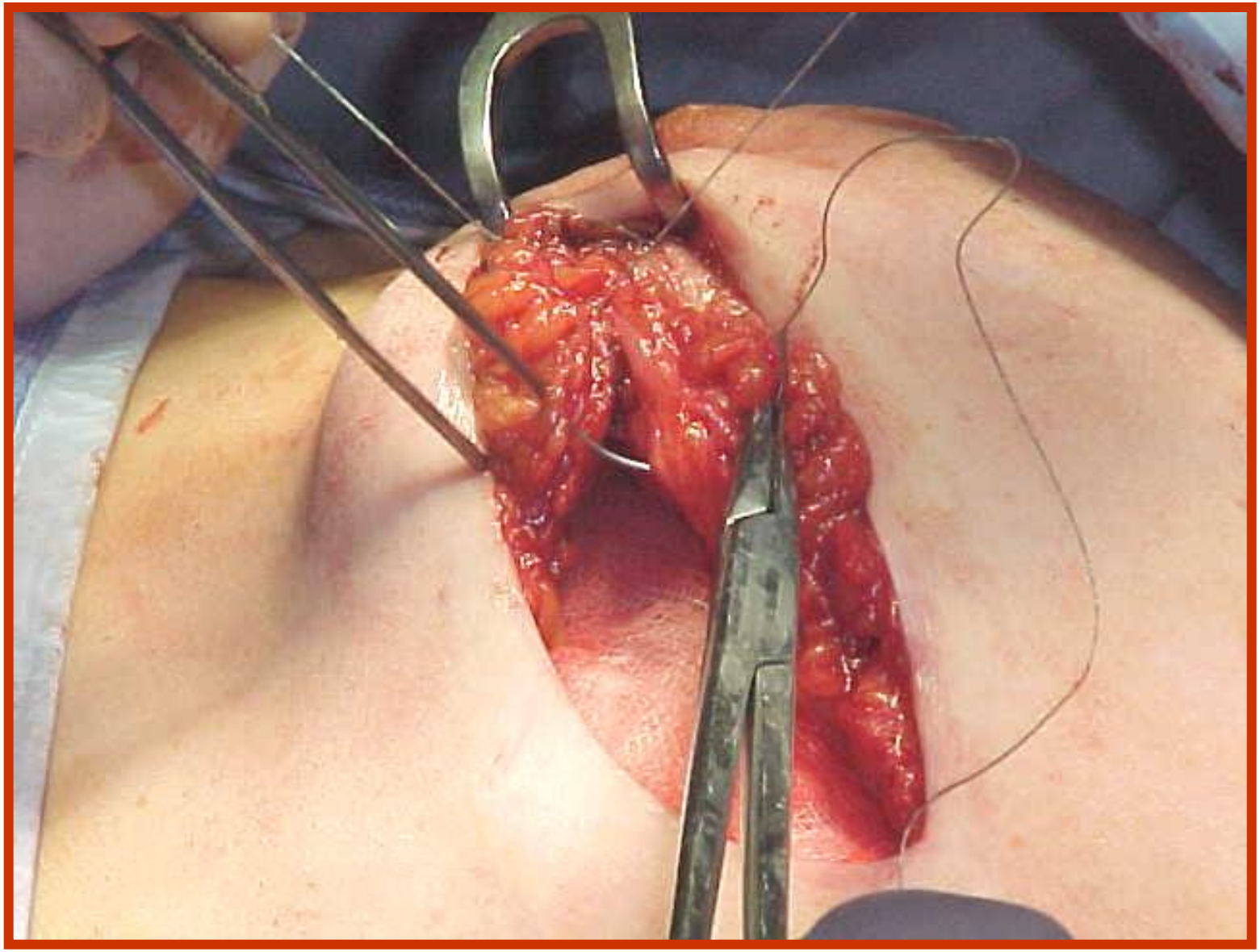


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Quadrantectomy

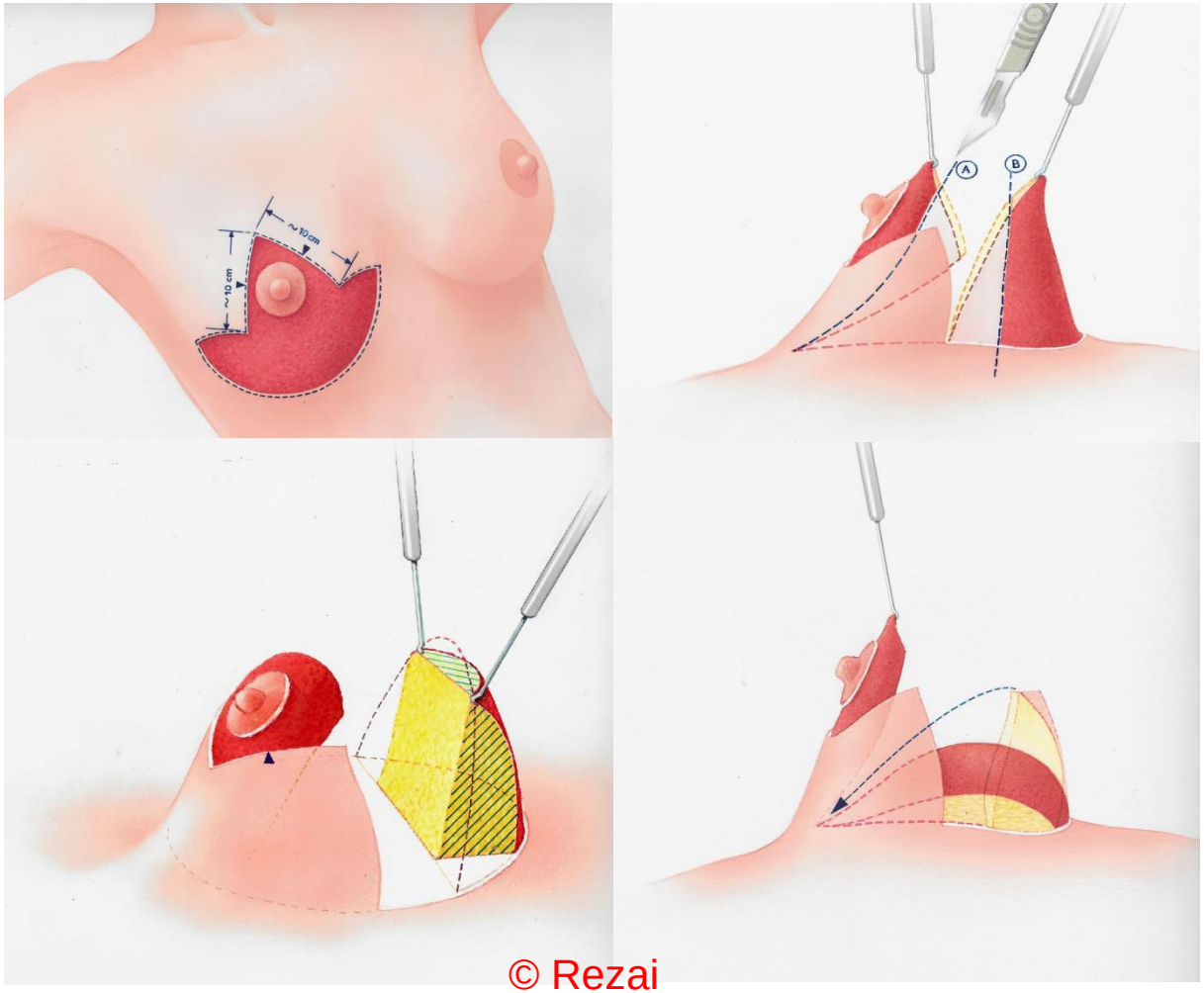


Breast gland reconstruction



Tumor-adapted reduction mammoplasty 20.8%

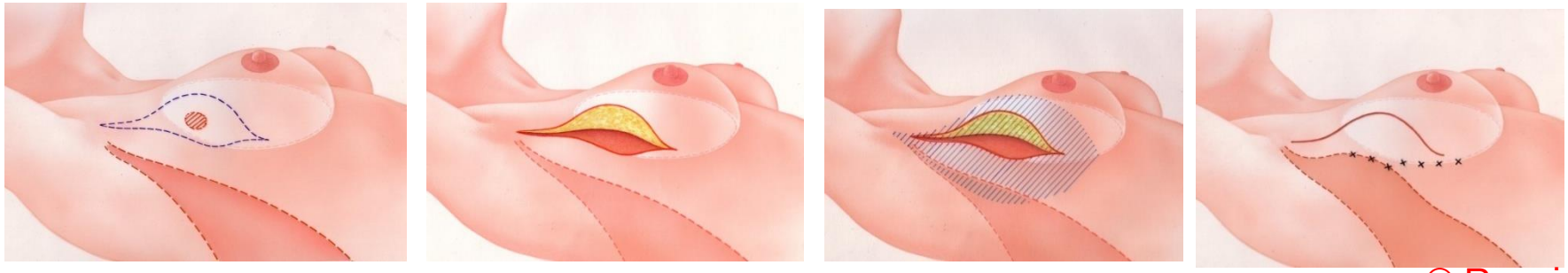
Modified inferior pedicle (M.Rezai)



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Rezai M, Veronesi U. Oncoplastic principles in breast surgery. Breast Care 2007;2:277-278

BCT with advancement flap 4.4% (M.Rezai

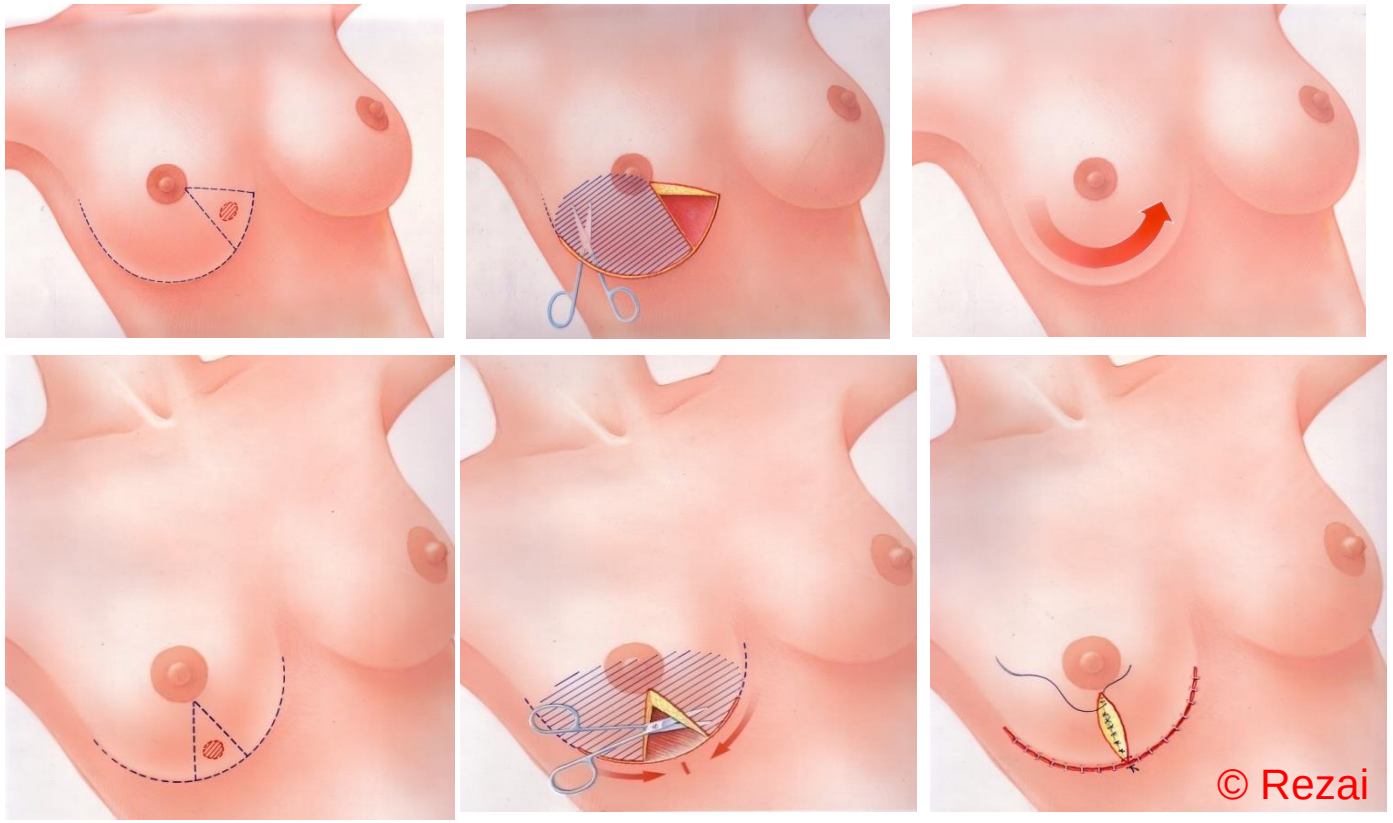


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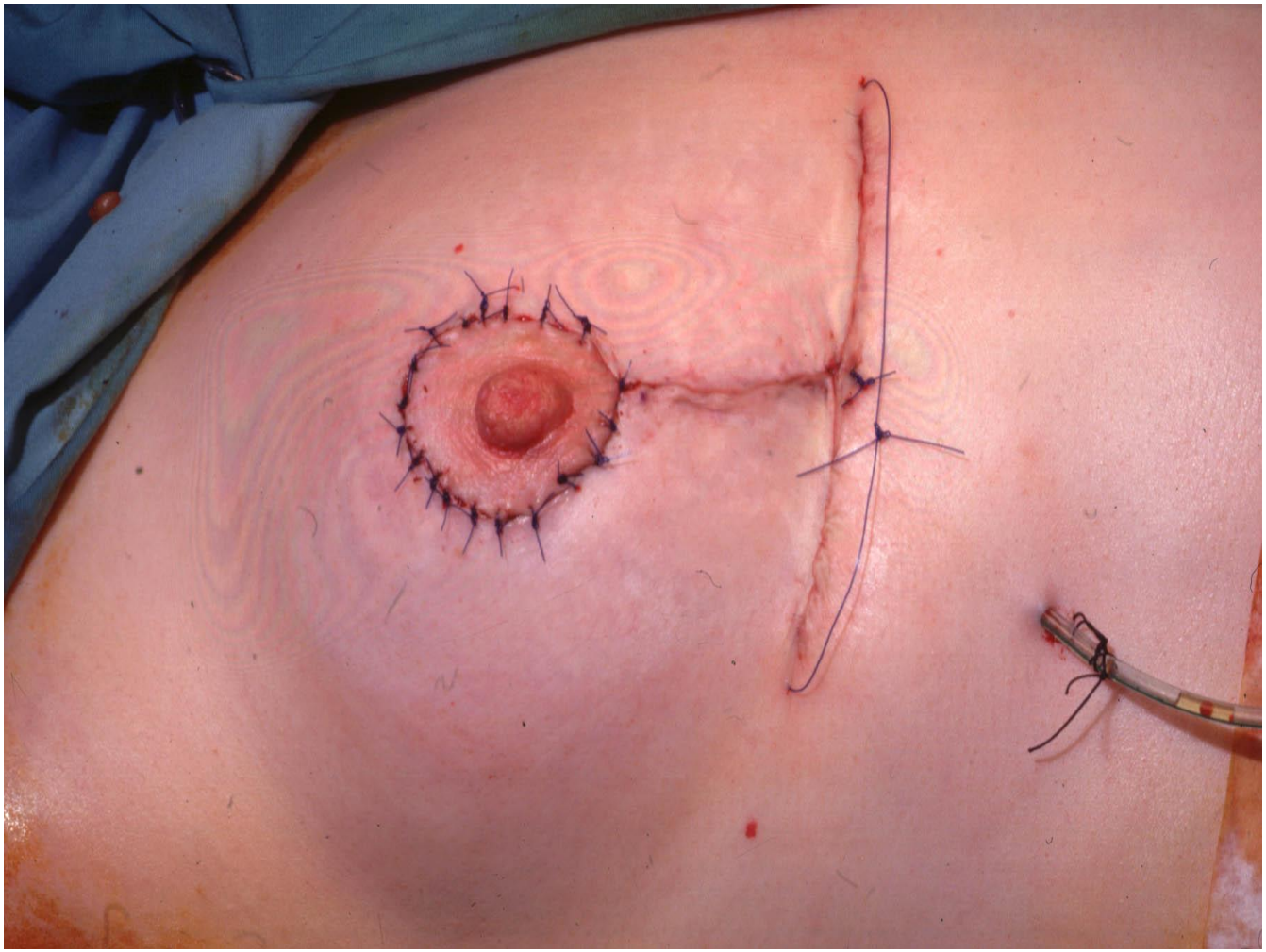
(Tumoradapted Rotation mastopexy 6.7% (M. Rezai)



Rezai M, Veronesi U. Oncoplastic principles in breast surgery. Breast Care 2007;2:277-278

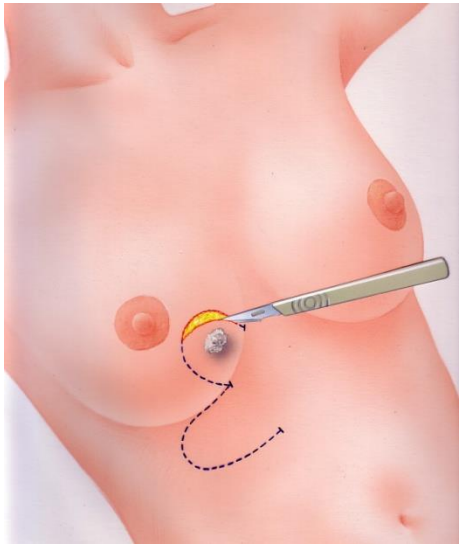


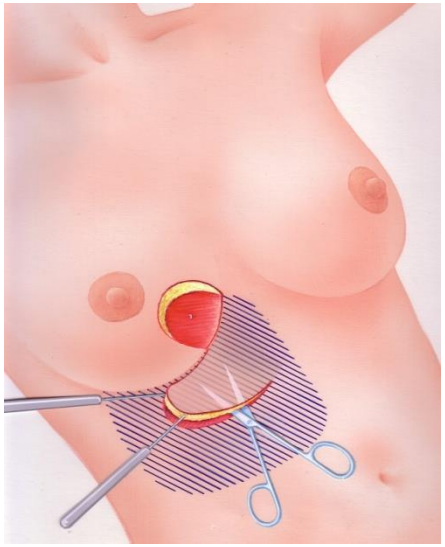
Dr S.R.Sahni,2007



Dr S.R.Sahni,2007

BCT Thoraco Epigastric Flap and others 3%







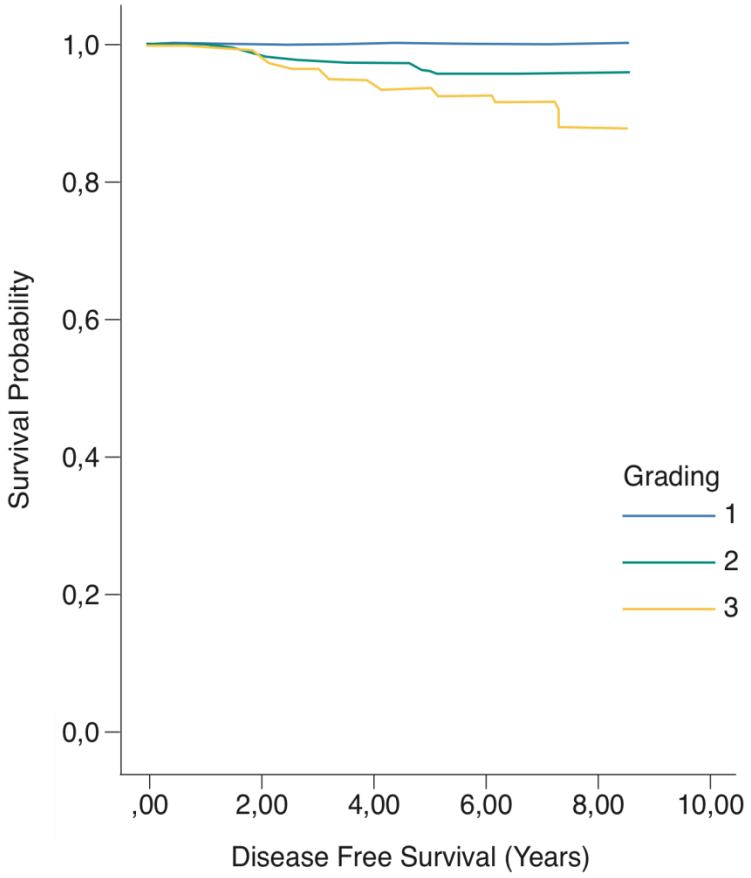


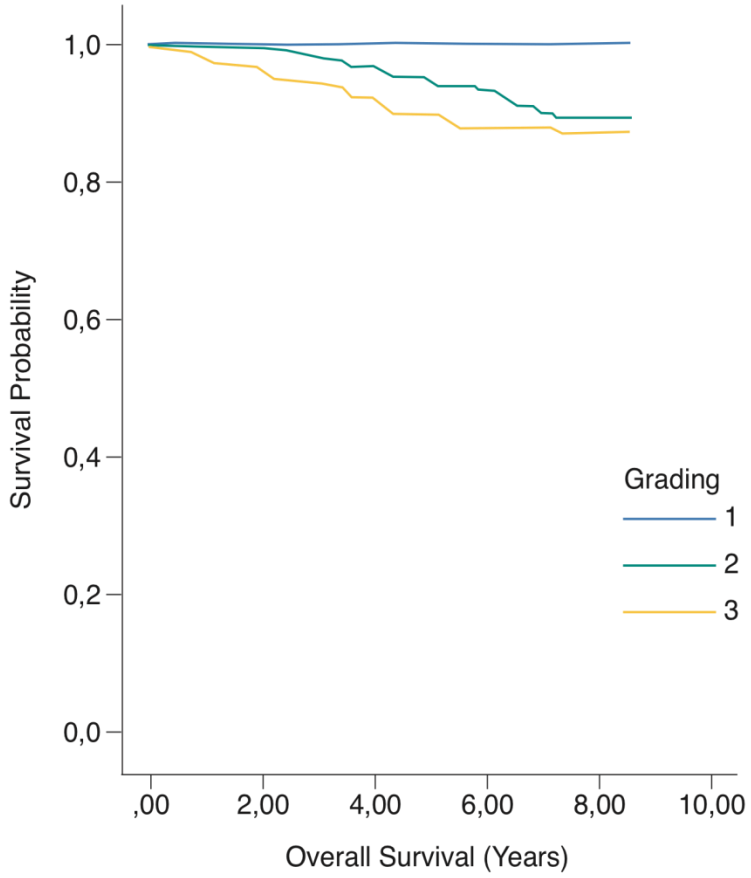
Breast conservation: Grading and survival

5 years overall survival

G1: 100% , G2: 95,1 %

G3: 90,2 %



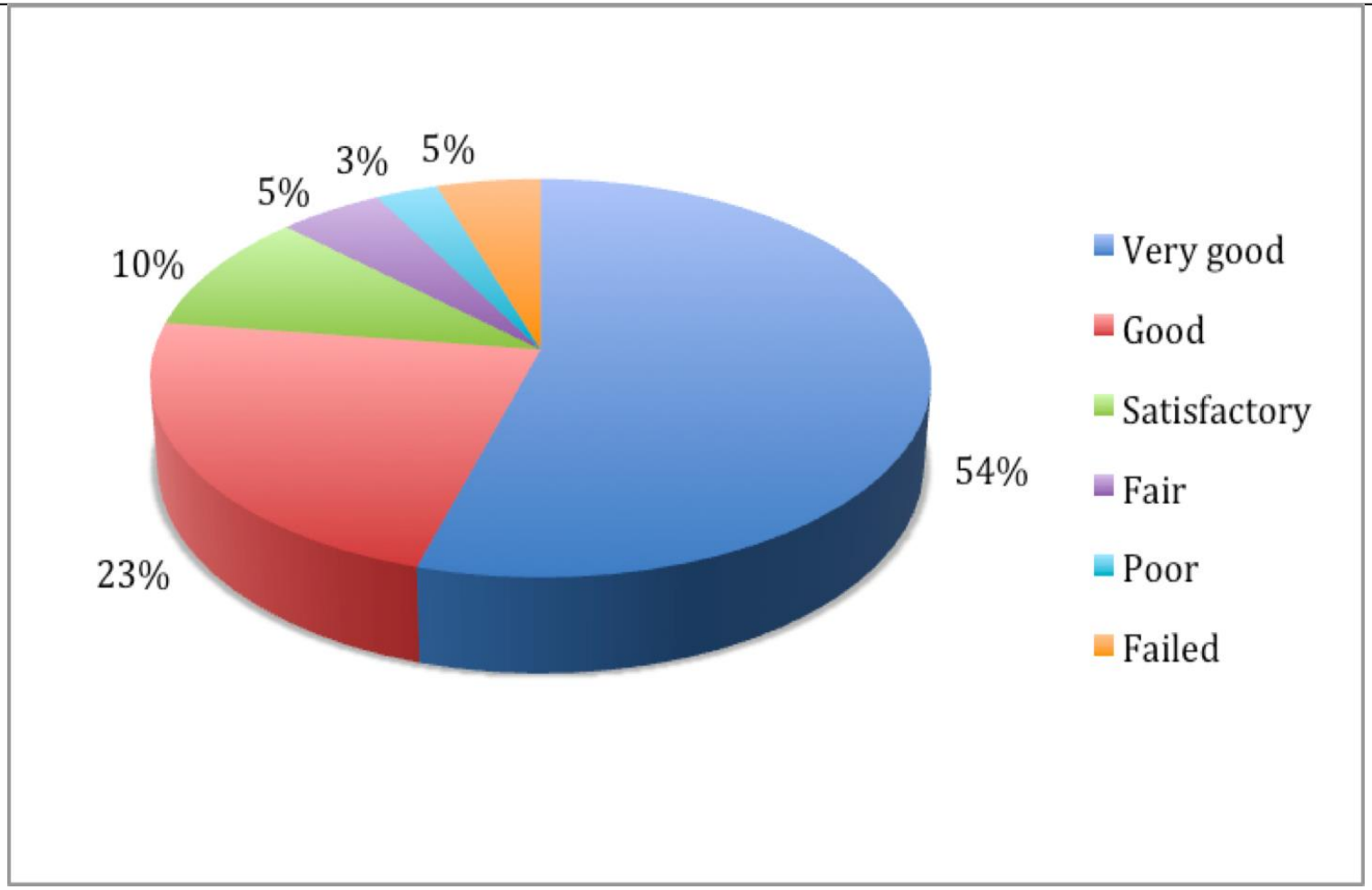


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Overall survival according to intrinsic subtype

Histopath. subtyp	Number	Number of event	Number	%
Luminal A	592	34	558	94.3%
Tripelnegt.	97	18	70	81.4%
Lum.B Her2 Posit.	80	9	71	88.8%
Lum.B Her2 negat	73	11	62	84.9%
Her2 Posit. (non Lum)	54	8	46	85.2%
Unknown	48	8	40	83.3%
Total	944	88	856	90.7%

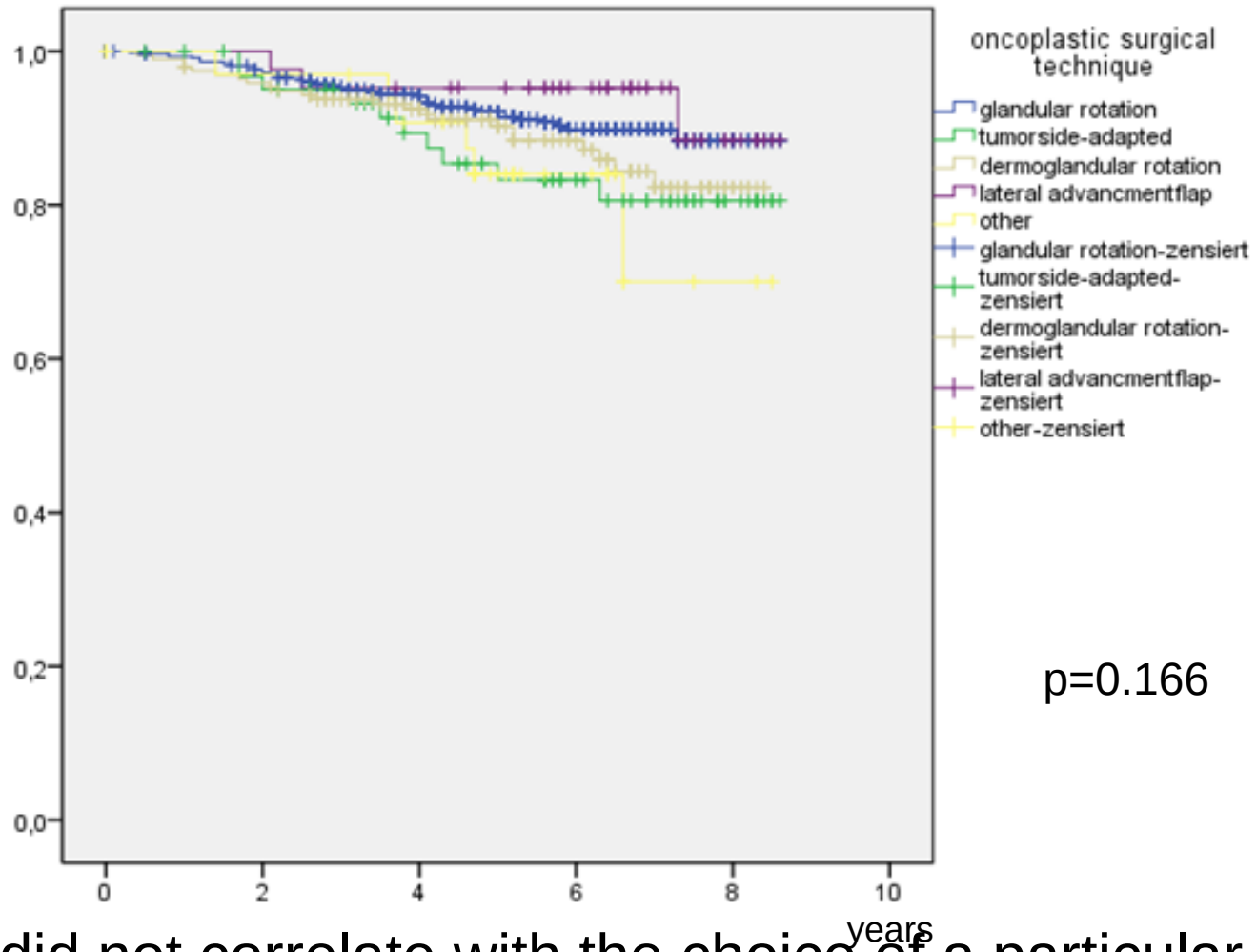
mahdi@



87 % were satisfied with the surgical outcome

Choice of oncoplastic technique and DFS

Cumulative DFS



p=0.166

DFS did not correlate with the choice of a particular onco-plastic technique(p=0.166)

Take HOME

- Beware of the MRI, use it sensibly
- MC/MF has worse prognosis: adjuvant systemic therapy
- Adjuvant systemic therapy reduces LR by half
- Whole breast RT reduces LR rates by another half

Take HOME

- Optimal imaging
- Consider neo-adjuvant chemo and radiation therapy
- Perform complete excision/s +/- oncoplasty

Surgery is only one sub-step out of multiple steps in breast cancer treatment. Thus, both a diagnostic and an oncological expertise are indispensable and a definite requirement.

ACKNOWLEDGEMENTS

- Prof Umberto Veronesi
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THANK YOU



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