

Oncoplasty in breast surgery: Indications and what is possible

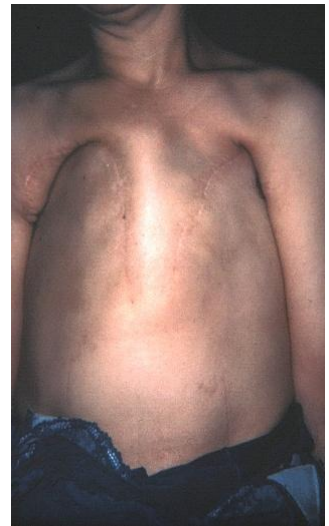
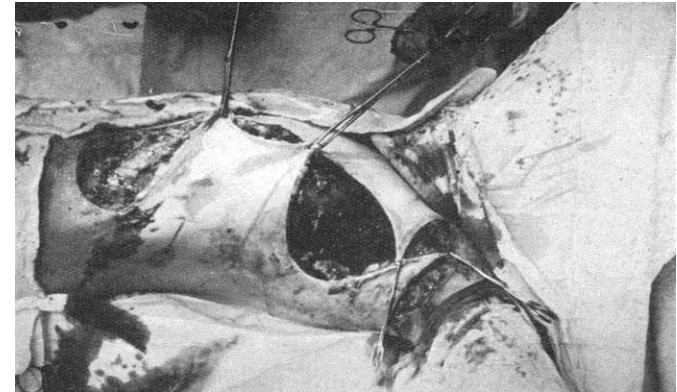
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From Halsted to oncoplasty

- Halsted 1894: radical mastectomy including muscle and lymphatics vessels
- Patey 1948: modified mastectomy
- Veronesi 1981: breast conserving therapy with quadrantectomy and radiotherapy
- Fisher 1985: lumpectomy
- Audretsch, Clough 90': oncoplastic surgery





Breast conserving therapy

- Quadrantectomy or lumpectomy followed by radiotherapy
- Good survival rates and good local control after 20 years (Veronesi 2002)
- Rules for conserving breast therapy
 - T < 3cm
 - Unifocal
 - Never treated
 - Allowing good cosmetic result



Limits of BCT

- Prolonged survival and rising of patients expectation put the focus on cosmetic outcome, quality of life and patient satisfaction
- Conflict between
 - Removing sufficient tissue to ensure adequate tumor excision = free margins
 - Maintaining a good cosmetic result



Aesthetic sequelae

- 60 to 70% of breast conserving therapy
- Poor cosmetic results in 20 to 30 % of BCT because:
 - Lateral deviation of the nipple-areolar complex
 - Seroma formation and late deterioration
 - Irradiation causes oedema and fibrosis

To avoid aesthetic sequelae



Grade 1



Grade 3

Grade 2



From Clough et al. 2008.



Indications for oncoplastic surgery

- Breast volume excision $> 10\%$ for medial tumors
- Breast volume excision $> 15-20\%$ for lateral tumors
- Tumors $> 3\text{cm}$
- Multifocality if foci $\leq 5\text{ cm}$ apart
- After neoadjuvant chemotherapy
- re-excision for involved margins after lumpectomy



Oncoplastic surgery needs

- Preoperative assessment
 - Eliminate multicentricity (MRI)
 - Tumoral localisation (guide wire)
- Trained surgeon
- Sufficient breast volume (brassiere cup size \geq B)
- Operating table allowing the sitting position



Oncoplastic surgery needs

- **Anticipation with a multidisciplinary team**
 - Oncologist aware of the planned surgical procedure
 - Prediction of response to chemotherapy
 - Intratumoral clip before treatment
 - Radiotherapist aware of the planned surgery
 - Volume of irradiation
 - Surgeon knowing the adjuvant radiotherapy
 - Clips in the tumor bed

Anatomy



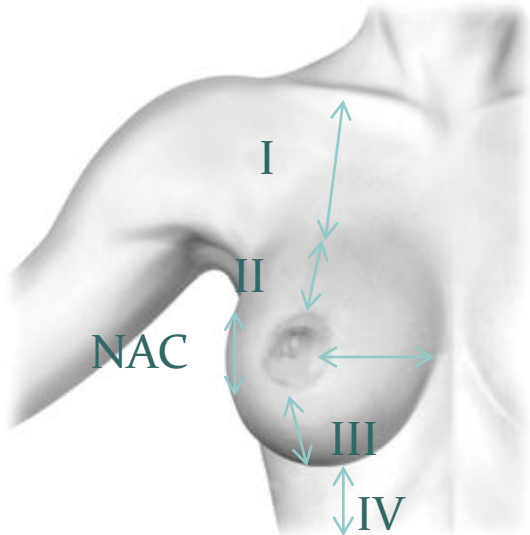
Ideal Standard measurements

Segment I + segment II: 15-17 cm

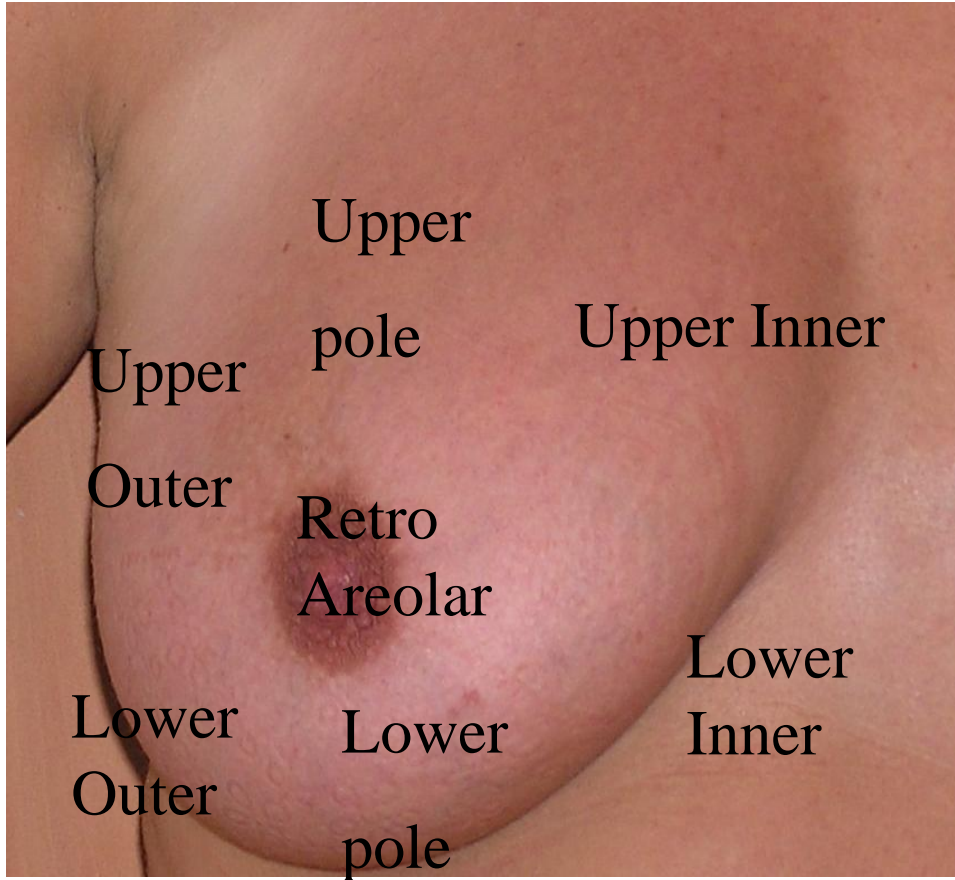
Nipple areolar complex: 4-5 cm

Segment III: 6 cm

Distance NAC-midline: 9-11 cm



One specific technique per site



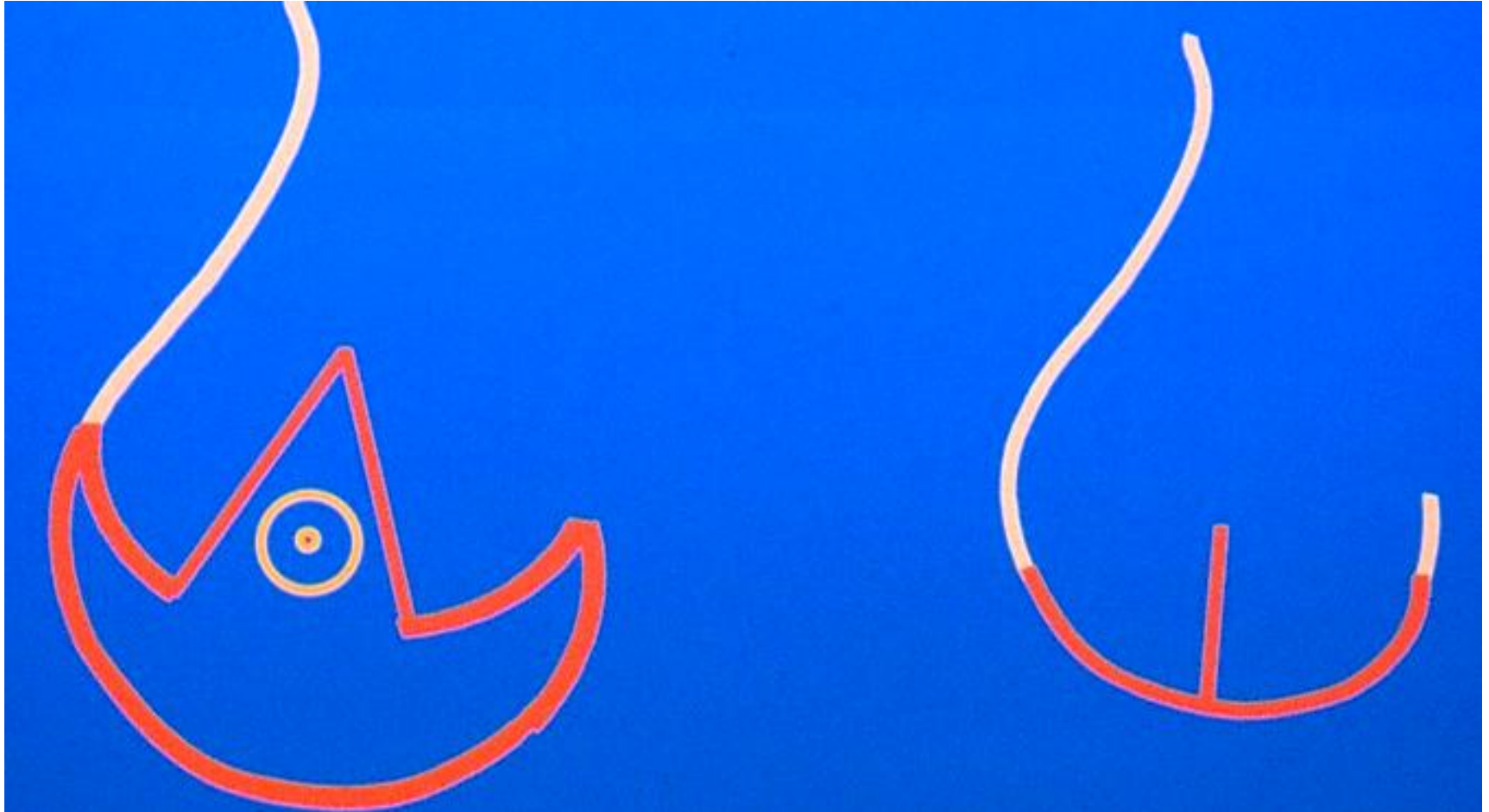
- **Aesthetic techniques**
 - Inverted T with superior pedicle (reduction mammoplasty)
 - Inverted T with inferior pedicle
 - J-plasty
 - Periareolar
- **Combination techniques**
 - Lateral mammoplasty
 - Omega (bat-wing)
 - Medial mammoplasty
 - Inframammary fold plasty
 - Nipple-areola complex excision



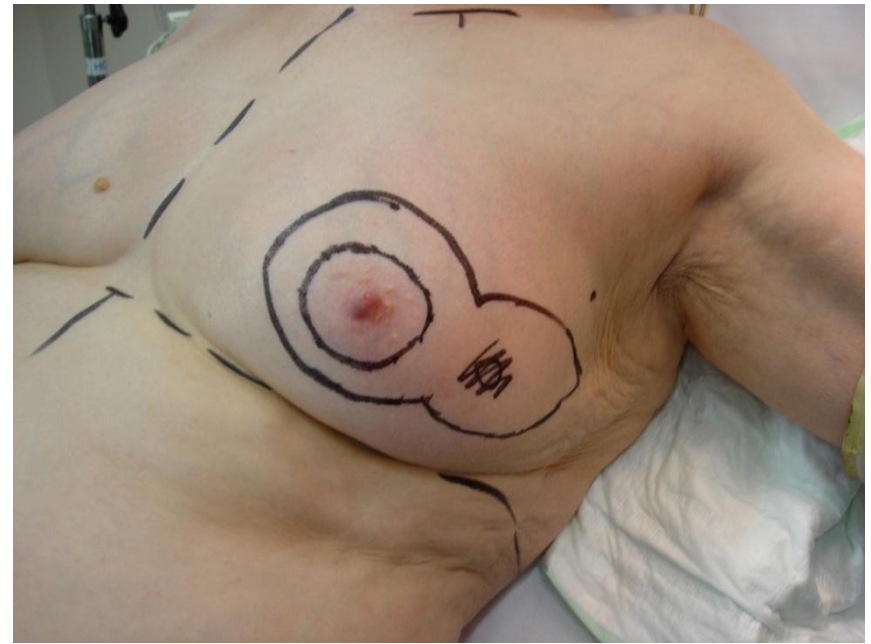
Principles

- Avoid seroma by resection without large dissection between skin and gland
- Avoid deformities by Nipple areolar complex repositioning
 - desepidermisation opposite to the excision area
 - Respect NAC vascularisation
- Respect minimal standard measurements
- symetrisation

● ● ● | **Inverted T with superior pedicle:
reduction mammoplasty**



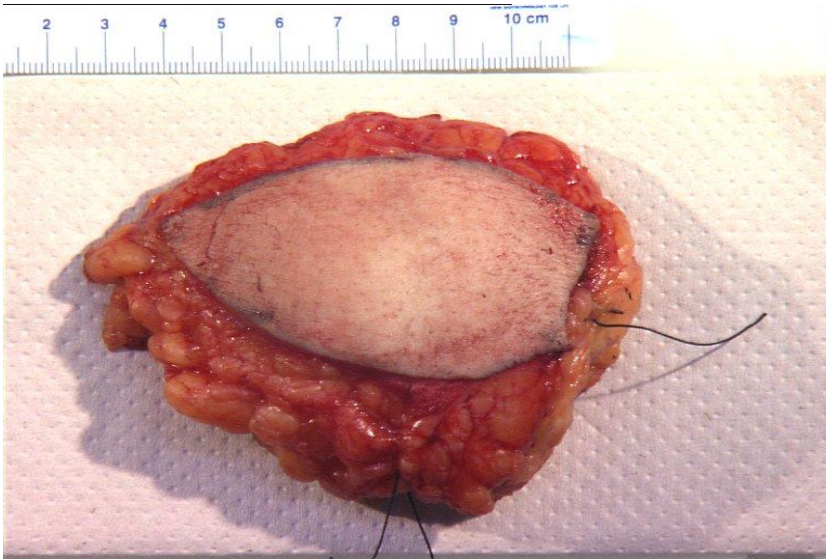
Lateral mammaplasty: tumor of the outer quadrants



Courtesy of Dr Virginie Fourchette



Specimen



Lateral mammoplasty: tumor of the outer quadrants

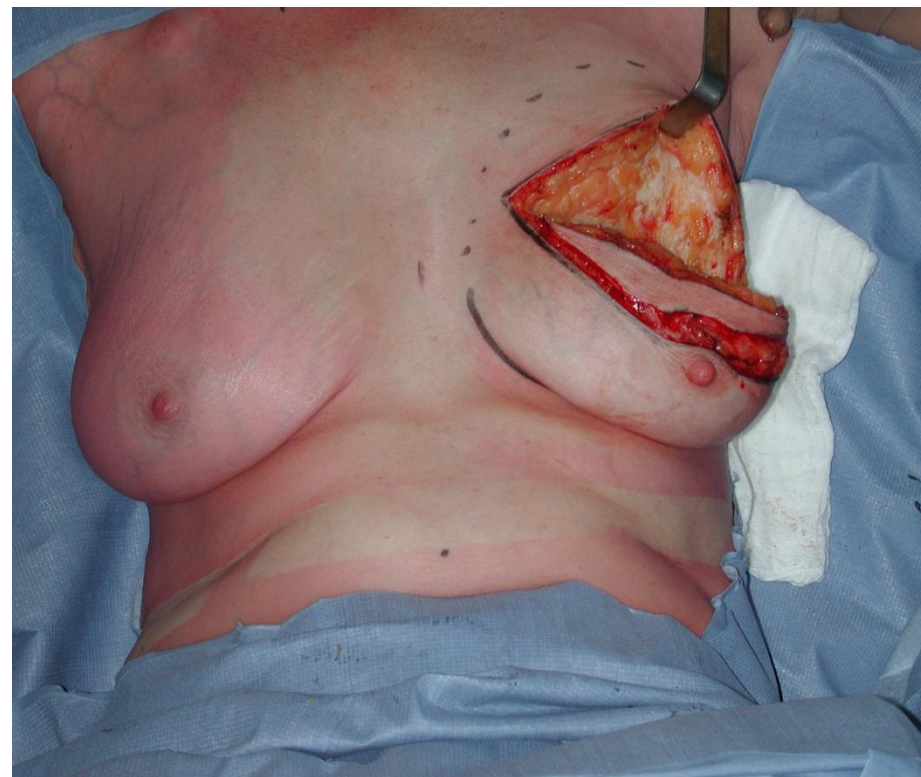
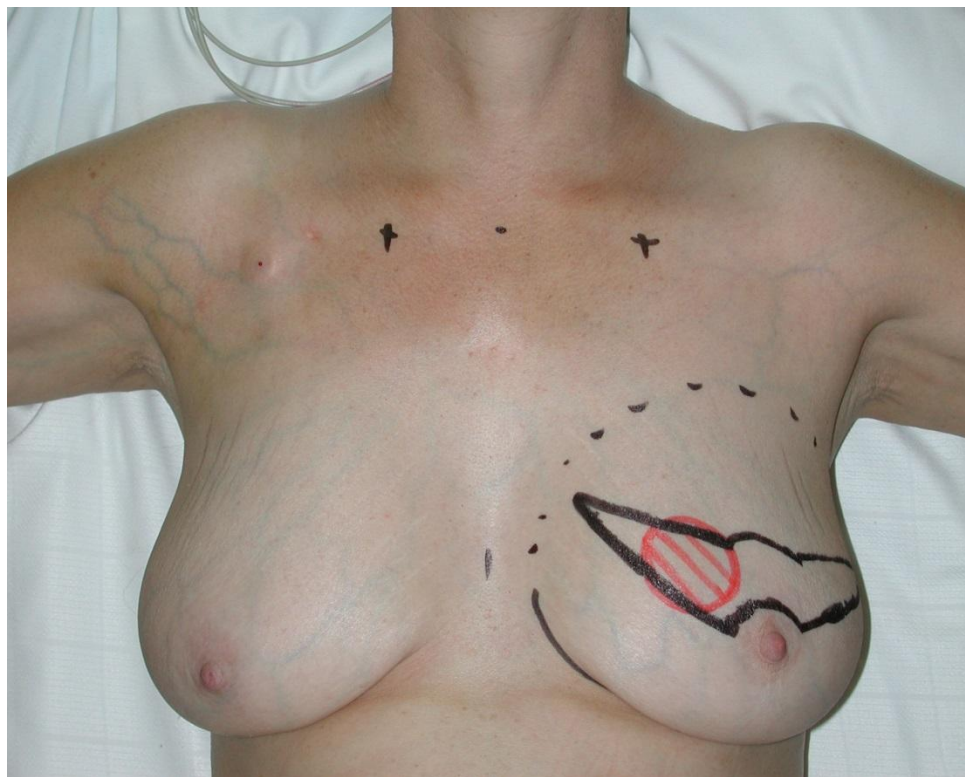


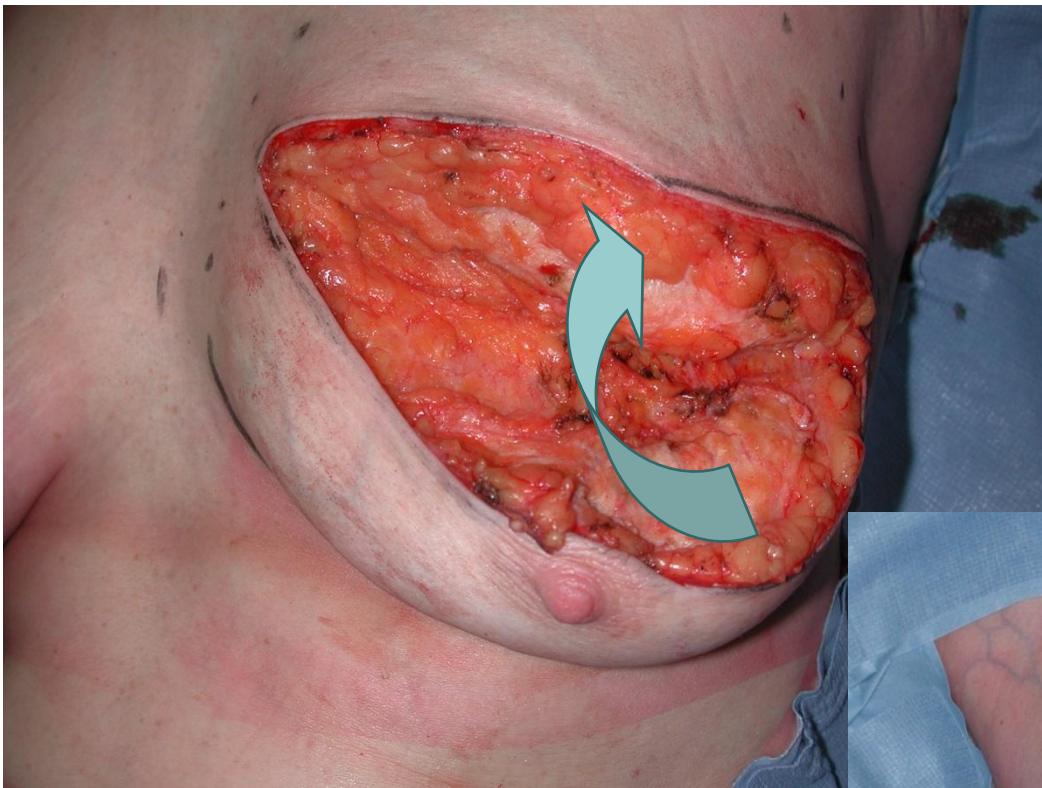
Courtesy of Dr Virginie Fourchette

● ● ● | **Right lateral mammaplasty:
symetrisation needed**



● ● ● | **Tumors of the upper medial quadrant: omega plasty (batwing)**





Courtesy of Dr Alfred Fitoussi



Outcome

Fitoussi et al.

Plast. Reconstr. Surg. 125:454, 2010.

- 540 patients undergoing oncoplastic surgery from 1986 to 2007
- T1 to T3
- Various techniques
- Aesthetic grading on a five-point scale from 1 (excellent) to 5 (poor)
- 20% of neoadjuvant therapy
- Mean resection weight 187 g [8-1700]
- Mean inpatient stay 4.7 days [1-13]

Single largest retrospective study describing the outcome over 2 decades

Median age	52 [28-90]
Median tumor size	29 mm [4-100]
Involved margins	18.9%
Secondary mastectomy	9.4%
Good cosmetic outcome at 5 years	90.3%
Complication requiring surgery	3.3%
Complication delaying adjuvant treatment	1.9%
Median follow-up	49 months [6-262]
5 year Overall survival	92.9%
5 year disease free survival	87.9%
Recurrence rate	6.8%

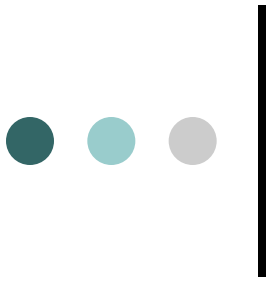


Outcome

Semprini et al.
The Breast 22 (2013) 946-951 .

- 489 patients undergoing post-quadrantectomy breast reshaping surgery from 2005 to 2010
- 76% simple breast reshaping with or without NAC replacement and 24% of more complex techniques
- Aesthetic grading on a four-point scale
- 0% of neoadjuvant therapy
- Mean resection weight 100 g [18-200]

Median age	65
Median tumor size	?
Involved margins	15.75
Secondary mastectomy	?
Good cosmetic outcome at 6 months	93%
Complication	20%
Median follow-up	?
5 year Overall survival	?
5 year disease free survival	?
Recurrence rate within 5 years	0.6%



Silverstein et al.
The Breast J Jan 2015.

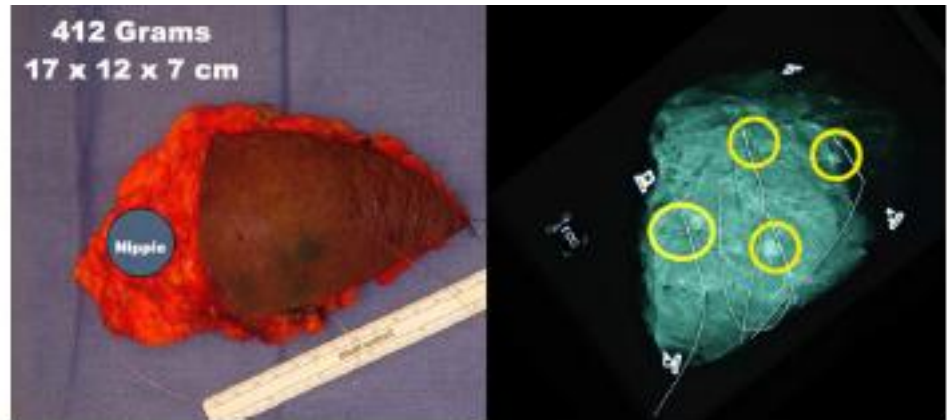
- 66 patients undergoing extreme oncoplasty
- Tumor > 5cm, multifocal and/or multicentric
- All patients were first advised to have a mastectomy
- 0% of neoadjuvant therapy

Outcome

Median age	?
Median tumor size	62 mm
Involved margins	17%
Secondary mastectomy	6,1%
Good cosmetic outcome at 6 months	?
Complication	?
Median follow-up	24 months
5 year Overall survival	?
5 year disease free survival	?
Recurrence	1,5%

Extreme oncoplasty

From Silverstein et al, 2015





Outcome of oncoplastic breast surgery

- ***Haloua et al. Systematic review of oncoplastic breast conserving surgery. Annals of Surgery 2013.***
- *No randomized controlled trials identified*
- *2090 abstracts, 88 articles, 11 relevant prospective studies selected*

- *Tumor size T1 to T3*
- *Involved margins: 7 to 22%*
- *Mastectomy: 3 to 16%*
- *Good cosmetic outcome 84 to 89%*

- *Local recurrence 0 to 7%*

- *Complications around 20%*
- *Postoperative stay 4 to 6 days*

- *Larger tumor excision*
- *Involved margins remains the same*
- *Mastectomy rate is low*
- *Evaluation of cosmetic outcome is heterogenous (method and time)*

- *Follow up varied considerably*

- *Increased rate of complications*
- *Longer postoperative stay*



To summarize

- Oncoplastic surgery allows wide excision with good cosmetic outcome and high rate of free margins
- Low rates of converted mastectomy
- Survival and recurrence rates seem identical to standard BCT
- Complications rate is slightly higher but with no significant longer delay to adjuvant treatment
- One quadrant, one technique
- Needs symetrisation, synchronous or delayed
- Needs a specific training
- Multidisciplinary approach is mandatory

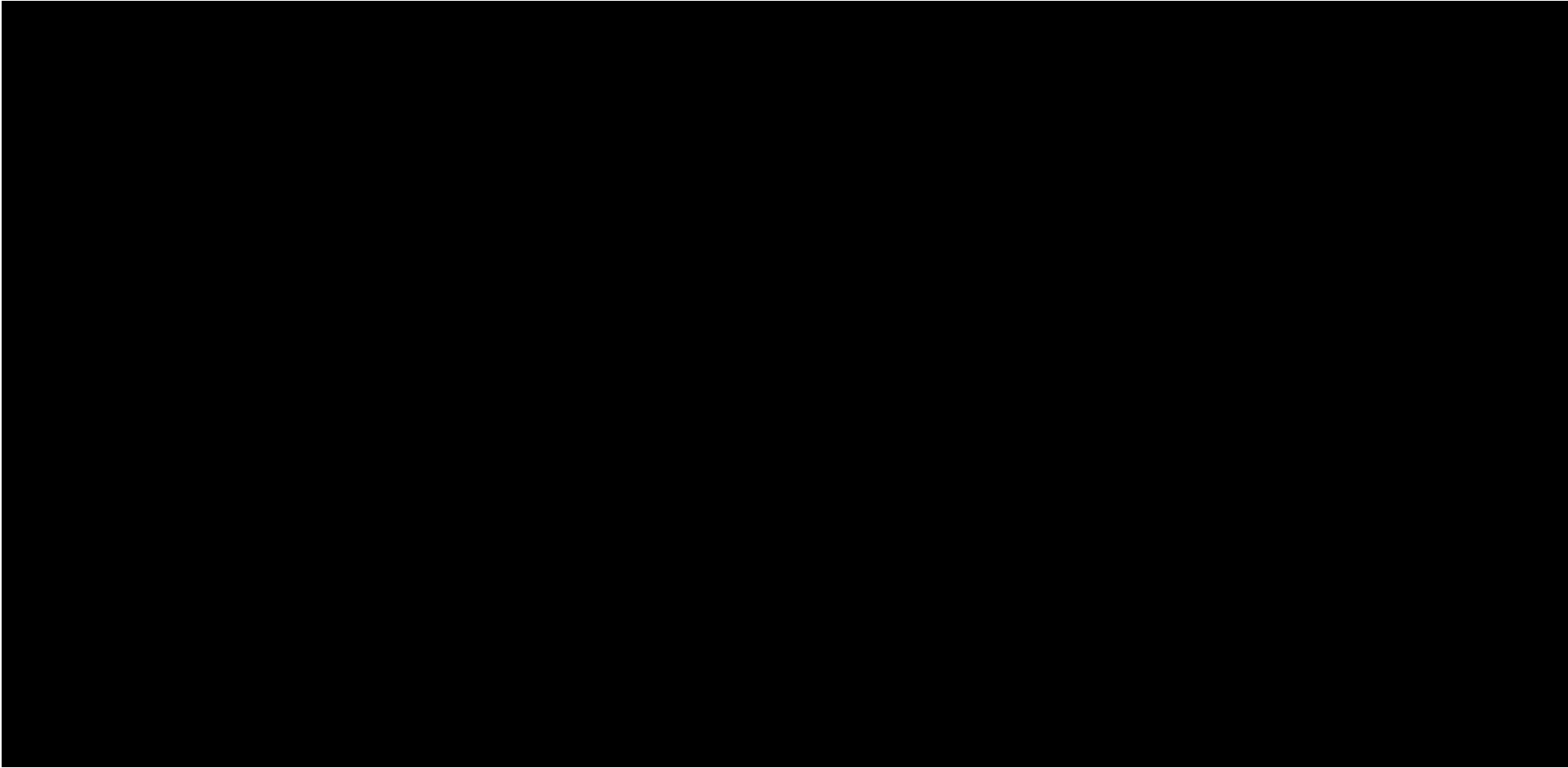


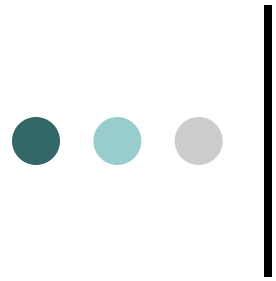
Remaining indications for mastectomy = contra-indications for oncoplastic surgery

- T4 and inflammatory tumors
- Multicentric disease (debated)
- Widespread ductal carcinoma in situ/ extensive malignant microcalcifications
- Large tumor-to-breast ratio (no response to neoadjuvant chemotherapy)
- Recurrent disease after breast conserving therapy (second conservative treatment debated)
- Patients with high risk of recurrence (BRCA1/2) (relative)
- Specific demand of the patient



Lateral mammaplasty





Thank you for your attention

Special thanks to:

YKSI production

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