BREAST CONSERVING SURGICAL PROCEDURES: CLASSIC AND ONCOPLASTIC

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BREAST CONSERVATION SURGERY Outline

● Cosmetic challenge of the lumpectomy
● Principles of tumor localization
● Examples of oncoplastic procedures

FIGURE 2-1

Standard Incision: Tumor Origin

Standard Incision: Surface Marking
Skin/Pectoral Adherence Deformity

Lower Pole Deformity

Nipple-Areolar Deformity

Nipple-Areolar Deformity

Partial Breast Reconstruction

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SEGMENTAL BREAST ANATOMY

- Ductal tree follows segmental distribution
- Breast cancers often follow anatomy of ductal tree
- Collateral circulation permits lumpectomy without necrosis

SEGMENTAL BREAST ANATOMY

- Going and Moffat, 2002 University of Glasgow
- 2mm serial sections of autopsied breast
- 3-D computer model reconstruction
- Segmental ductal anatomy observed

SEGMENTAL BREAST ANATOMY

- Sir Astley Cooper (1768-1841)
- Gross autopsy breast specimens
- Wax / mercury ductal injections
- Segmental ductal anatomy observed

CANCER DISTRIBUTION PATTERNS

- Localized
- Segmentally Extended
- Irregularly Extended

BREAST CANCER PATTERNS: Disease Distribution Categories

Amano et al., Breast Cancer Res Treat: 60:43, 2000
BREAST CANCER PATTERNS:
- Localized
- Segmentally Extended
- Irregularly Extended

Partial Mastectomy Selection
- Localized - partial
- Segmentally Extended - partial
- Irregularly Extended – total (?)

ONCOPLASTIC RESECTIONS:
Specimen Size and Margins
Retrospective review (European Institute of Oncology)

<table>
<thead>
<tr>
<th>GROUP 1 (n=30) Oncoplastic Resection</th>
<th>Specimen Volume</th>
<th>Negative Margins</th>
<th>Margin Width</th>
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</thead>
<tbody>
<tr>
<td>200 cm³</td>
<td>25 / 30</td>
<td>8.5 mm</td>
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<table>
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<th>GROUP 2 (n=30) Standard Resection</th>
<th>Specimen Volume</th>
<th>Negative Margins</th>
<th>Margin Width</th>
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<td>118 cm³</td>
<td>17 / 30</td>
<td>6.5 mm</td>
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</table>

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**ONCOPLASTIC LUMPECTOMY**

**PARALLELOGRAM APPROACH**

**Quadradateral Incision: Tumor Origin**

**Quadradilateral Incision: Surface Marking**

*Injections 1 and 2 are Equal in Length*

**Quadradilateral Incision: Region to Remove**
MASTOPEXY LUMPECTOMY

BATWING LUMPECTOMY

Central Cancers
Batwing design
Partial or full thickness excision
Mastopexy closure
LOWER POLE CANCERS

Breast reduction design
Full thickness excision
Mastopexy closure

Breast Reduction Mastopexy

Invasive Cancer at 6:00

Reduction Mastopexy Lumpectomy

Skin Incision
SEGMENTAL CANCERS

Periareolar ("donut") design

Full thickness segmental excision

Mastopexy closure
BREAST CONSERVATION SURGERY
Summary

- Oncoplastic lumpectomy applies simple principles of breast cosmesis to cancer surgery
- The operative approach is based on the cancer’s anatomic orientation in the breast
- Complete radiographic localization is the key to designing an oncoplastic resection
- Oncoplastic resections both improve cosmetic outcome and increase surgical margins of resection