Prone Breast Setup, Planning, and Treatment

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Outline

• Prone Treatment Plans
• CT Simulation
• Contouring
• Placing the Isocenter
• Creating Fields
• Checking Field Clearance
• Selecting Treatment Energy
• Weighting the Treatment Fields
• Placing a Calculation Point
• Planning: FIFs vs. E-Comp
• Verification Simulation
• Treatment Tips
Prone Treatment Plans

Heart Mean: 97cGy
Prone Treatment Plans

Heart Mean: 72 cGy
Prone Treatment Plans

Heart Mean: 29cGy
CT Simulation

- Prone Breast System - Bionix
- Large Bore CT
CT Simulation

• Vac-Lok
CT Simulation

- CT Reference Marks
Contouring

- Contouring
• Tip-Rotate the View 180°
Contouring

- Tip: Use Auto Tools to Contour Breast Board
Placing the Isocenter

- Place the Anterior-Posterior location of the isocenter at the level of the mid-breast marker
- Right-Left as close to midline as possible, while still in the breast (if possible)
- Superior-Inferior at the level of the setup markers placed at simulation
Creating Fields

- Superior-Base of Clavicle
- Inferior-2cm below breast fold
- Medial-Wire placed (avoid opposite breast)
- Lateral-Mid-axillary
- Collimator-Rotate to match ribs
Checking Field Clearance

- 35cm safe distance
Selecting Treatment Energy

- Skin Dose 6MV vs 15MV
Weighting the Treatment Fields

Initial Calculation with Equal Weighting

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<thead>
<tr>
<th>Field ID</th>
<th>Technique</th>
<th>Machine/Energy</th>
<th>MLC</th>
<th>Field Weight</th>
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</table>
Weighting the Treatment Fields

Unequal Weighting = Equal Dose Distribution

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<th>Field Weight</th>
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Weighting the Treatment Fields

- If your Isocenter is outside the body, the TPS might not normalize the plan as expected.
- Switch the Calculation Model’s Calculation Options to “No Field Normalization”.

![Calculation Options](image1.png)

![Calculation Options](image2.png)
Placing a Calculation Point

Normalize the plan to a calculation point near the chest wall
Planning: FIFs vs. E-Comp

- Planning: FIFs vs. E-Comp
Planning: FIFs vs. E-Comp

- FIFs
Planning: FIFs vs. E-Comp

- FIFs

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Planning: FIFs vs. E-Comp

• FIFs cleaning up the holes
Planning: FIFs vs. E-Comp

- FIFs final dose distribution
Planning: FIFs vs. E-Comp

• E-Comp
Planning: FIFs vs. E-Comp

- E-Comp – Create Irregular Surface Comp
- Add Skin Flash
- Smooth Fluence
- Paint down the hot spots
Planning: FIFs vs. E-Comp

- E-Comp Final Fluence
Planning: FIFs vs. E-Comp

- E-Comp Dose Distribution
Verification Simulation

- Verification Simulation
Daily Treatment

- First day of treatment
Treatment Tips

• Experience will decrease setup times
• Have the same therapists perform setup daily
• Setup requires physical manipulation of the breast
• Pay attention to the tautness if the skin below the breast
• If the chest wall matches on kV but breast does not check the contralateral breast.
Thank You

• BIG THANKS to Dr. Zellars for implementing this technique in our department, and for co-presenting.

• Thanks!
Questions?: