Using SGRT To Improve Prone Breast Setups

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Disclosures

- AdventHealth Celebration has a COE agreement with visionRT

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Outline or Learning Objectives

- About us AdventHealth Celebration FL
- Pros and cons of prone breast setups
- Initial Workflow- Prior to SGRT
  - Challenges
  - Average Shifts
- Our transition to a tattoo less workflow
  - Staff evolvement
- The evolution of our prone breast workflow
  - Workflow created when first implementing tattooless treatments
  - Current workflow
- Overall improvements
- Clinical Experience
- Conclusion

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AdventHealth Celebration Radiation Oncology Department has:

- 2 Varian TrueBeam Linacs
- 1 Siemens CT scanner
- SGRT Systems
  - SimRT
  - MapRT
  - AlighRT (2)
  - DoseRT
  - PatientID

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Advantages of Prone Breast Treatments

PROS

Reduced lung and heart dose:

- The primary benefit of prone positioning is that it minimizes radiation exposure to critical organs like the lungs and heart, particularly beneficial for patients with large breasts or left-sided breast cancers.

Improved dose homogeneity:

- By allowing the breast to hang freely, the radiation beam can be more evenly distributed throughout the breast tissue, potentially leading to better cosmetic outcomes.

Potential for better skin sparing:

- In some cases, prone positioning may reduce skin irritation compared to supine positioning

CONS

Patient discomfort:

- Lying face down for extended periods can be uncomfortable for some patients, especially those with mobility limitations

Increased setup complexity:

- Prone setups often require specialized equipment and may take longer to position accurately compared to supine positioning

Potential for positioning challenges:

- Maintain precise positioning thought-out treatment can be difficult for some patients, especially for larger patients

Limited access to certain lymph node regions:

- Depending on the treatment plan, accessing specific lymph node areas may be more challenging in the prone position

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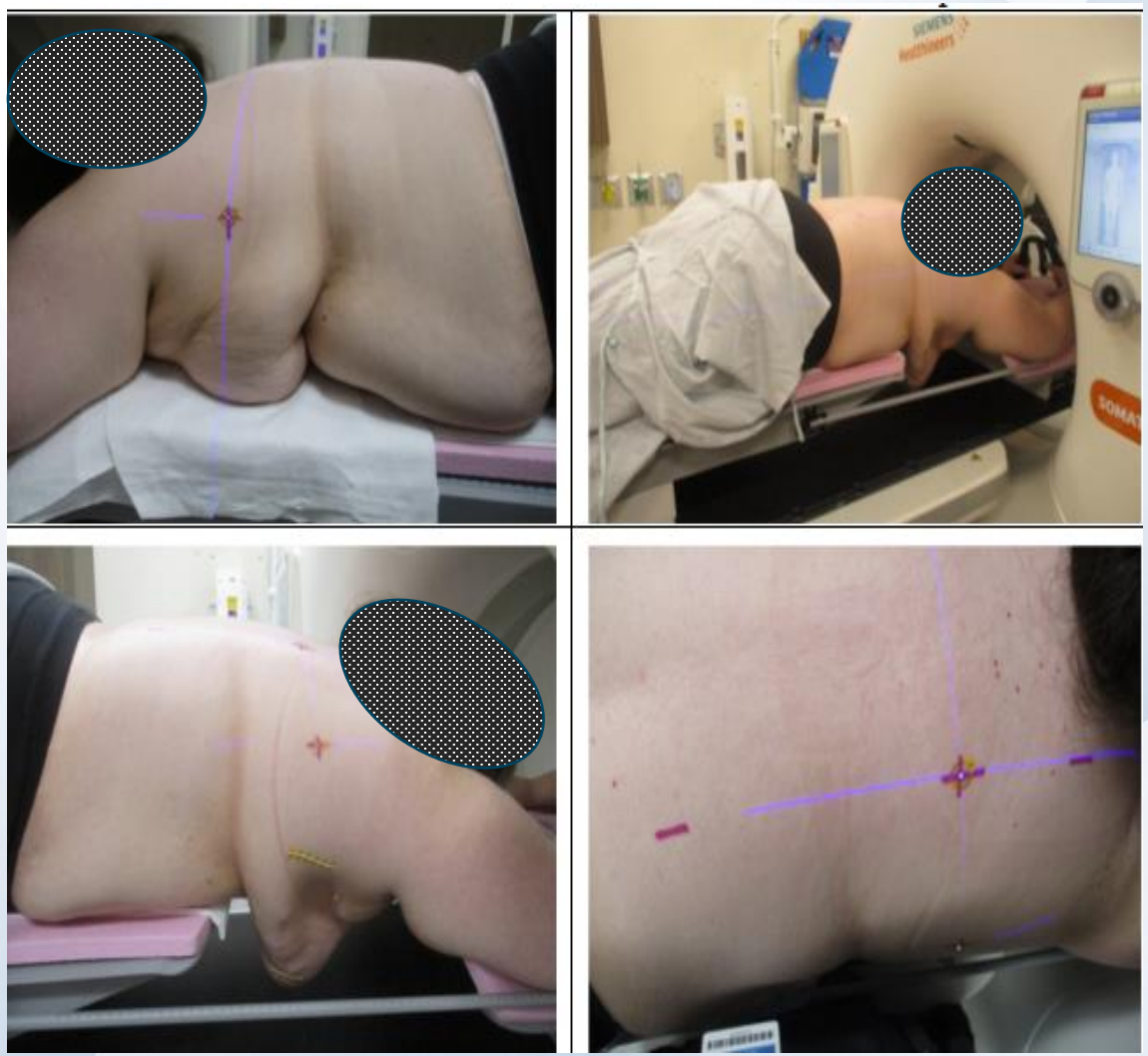
Initial Workflow - Prior to SGRT



Workflow

- Arms above head holding pegs
- Face indexed with cushion
- Contralateral breast pulled out of the way
- In and out Lasers dissecting effected breast
- Left to right laser moved closer to effected breast to eliminate shifts.
- Patient should not be rolled into the board
- Record Index number on board
- Tattoo CT ISO/ Document for New Start

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Initial Workflow- Challenges

- Frequent trips in and out of the room to adjust setup
- Unable to check if patient is straight on table due to moving left to right laser in mapping
- Depending on shifts/ Patient position index bar number may need to be updated
- Multiple sets of tattoos
    - Patients did not apricate having multiple sets of tattoos Or being " poked" several times.
    - Multiple sets of tattoos can cause confusion for the treating therapist.
    - Patient marks are constantly updated day to day depending on imaging.
- Multiple re-plans due to table clearance issues.
- Patient anxiety and overall trust is lost when having to re-set up patient's multiple times
- Unable to monitor if patient is moving during imaging/ treatment

Initial Workflow- Average Shifts

Average Shifts

VRT	.60 (Set by therapist daily)
LNG	1.20
LAT	1.00
PITCH	2.11
ROLL	1.21
YAW	2.4
TIME	12 Mins

Per department policy re-imaging is required if shifts are greater then 1. Before AlignRT, we would re-image 46% of our prone patients daily.

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Transitioning To Tattoo less

AlignRT was installed Feb 2024. As a team we decided that we would stop tattooing by treatment area when we felt comfortable enough as a team.

- Head and Neck- March 2024
- Prostate/ Pelvis- April 2024
- Breast DIBH- June 2024
- SBRTS/ SRT - July 2024
- Prone Breast/ Prone Rectums- September 2024
- Tattoo Less Awards November 2024

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Transitioning To Tattoo less- Questions/ Concerns

Prone Breast was the last treatment area to go tattoo less. The staff had reservations about the following

- How do we “index” the patient without marks. “ You can't take away my index bar”
- How can we tell the patient is in the board correctly left to right
- The patient is so high up the camera can't see the ROI. Cameras are being blocked.
- Do we include the breast in the ROI or leave it out?
- Overall feeling of setting up the patient blindly

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Staff Involvement

- Each staff members rotated in Sim to learn how to set up prone breast patients (See one, do one, teach one)
- All staff was given in service on wires/boarders.
- MD created plan with staff to show what she is looking for while planning.
- Staff to help write SOP or Workflows based on findings
  - Staff felt more inclined to use the system when included in making decision

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Evolution Of Prone Breast Workflow

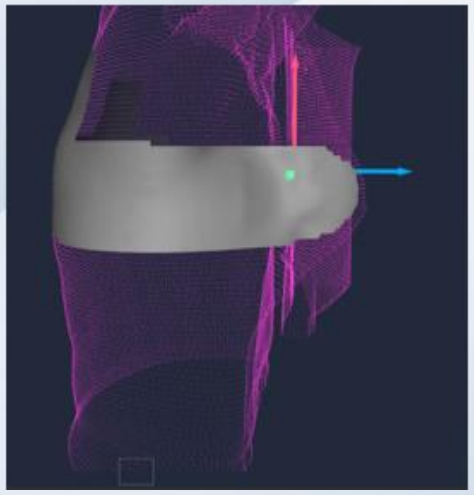
1st Tattoo less Workflow

- Arms above head holding pegs
- Face indexed with cushion
- Contralateral breast pulled out of the way
- Patient centered on board with left to right laser
- Back as flat as possible
- Smooth belly tissue away from opening
- In and out Lasers dissecting effected breast
- Verify there's no rolling into the opening
- All wires should be visible in the middle of the opening of board

ROI Example

ROI too high on shoulder depending on PA SSD

Enter Breast in ROI causing rotations



Average Shifts

VRT	.57
LNG	1.00
LAT	.80
PITCH	2.99 Increased by .8
ROLL	1.00
YAW	1.8
TIME	11 Mins

Pitch increased due eliminating index bar

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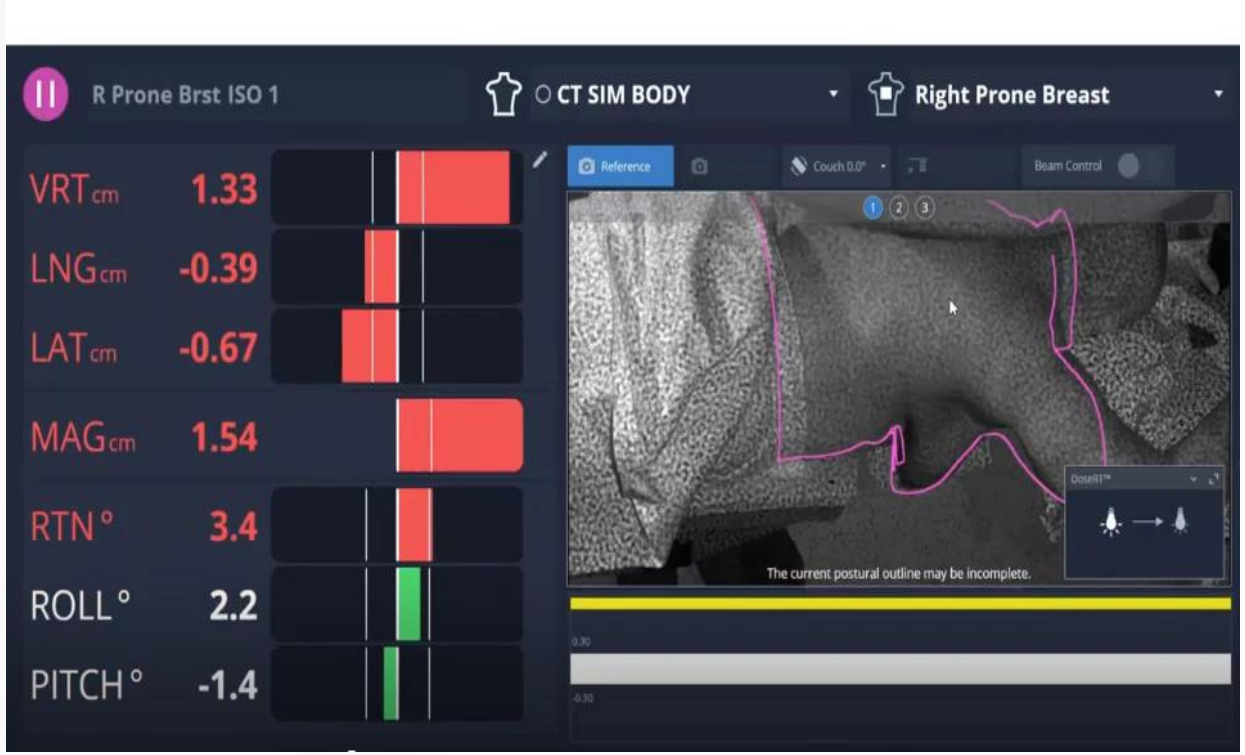
Challenges- Align RT Workflow #1



- Frequent trips in and out of the room to adjust the setup
- Too much tissue on ROI causing cameras to see rotations that aren't accurate
- ROI too high into shoulders. Depending on PA SSD camera is blocking ROI causing variations in patient set ups
- No marks to use for index bar. Patient position can vary depending on how they lay on the table

Pitch-increased from 2.11 to 2.99 (our limit)
Imaging increased due lack of index bar

LIGHTING THE WAY

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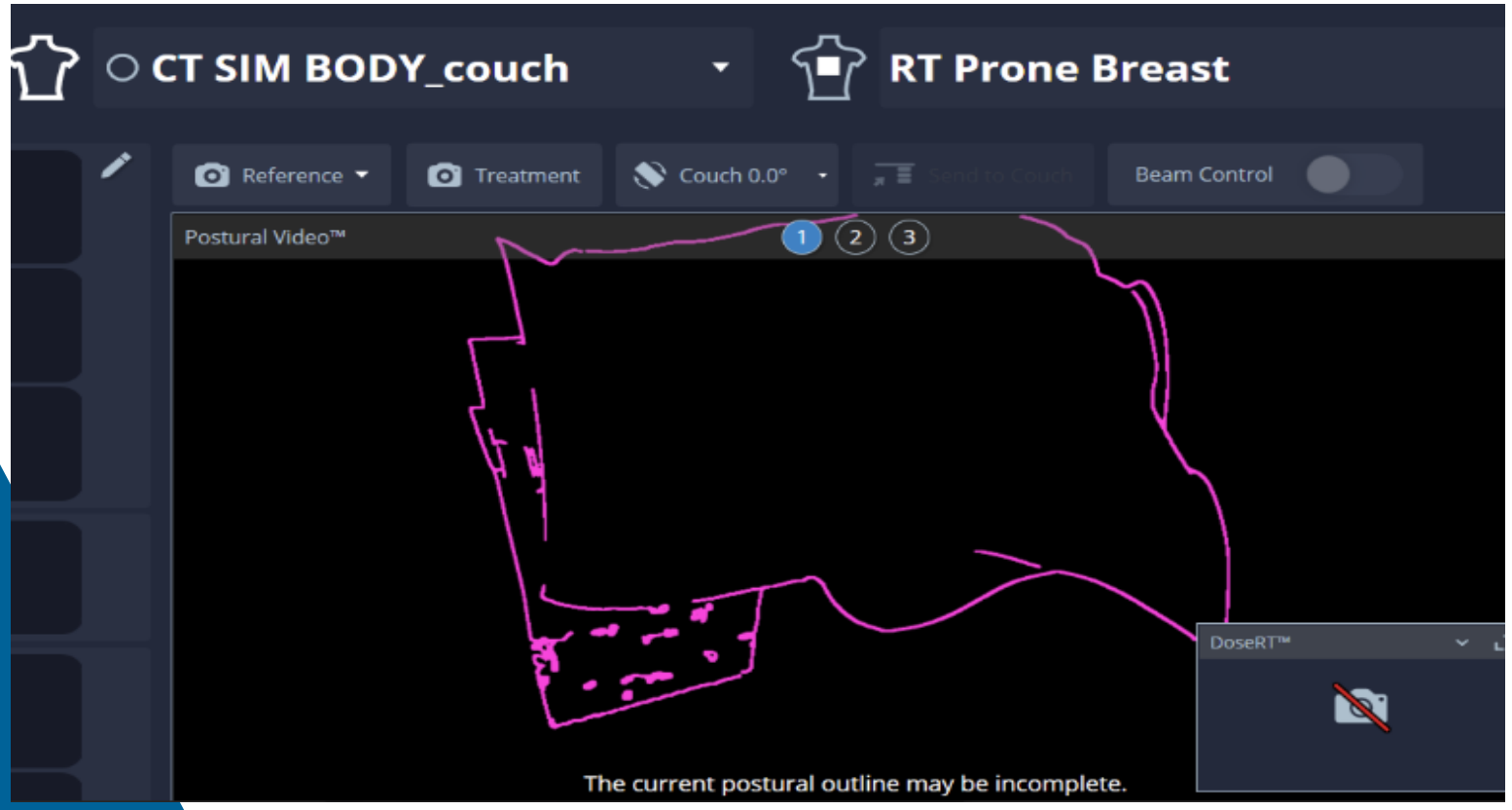
Body + Board



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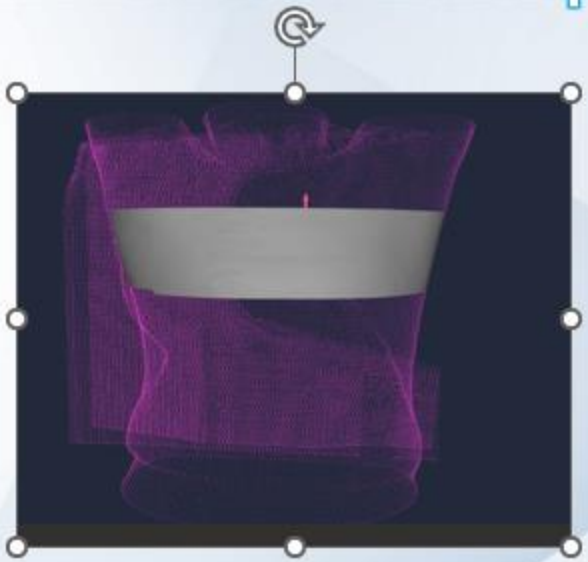
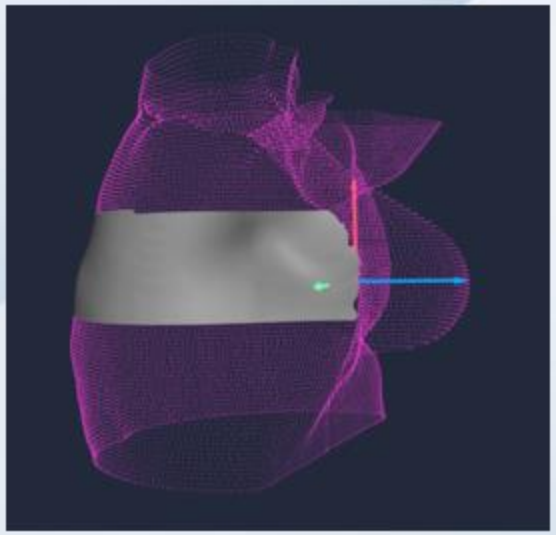
Evolution Of Prone Breast Workflow

Current Workflow

- Arms above head holding pegs
- Face indexed with cushion
- Contralateral breast pulled out of the way
- Patient centered on board with left to right laser
- Verify there's no rolling into the opening
  - Back as flat as possible
  - Smooth belly tissue away from opening
- All wires should be visible in the middle of the opening of the board
  - Superior Border- 2-3 CM from the top of board
  - Inferior Border- 2-3 CM from the bottom of the board
  - Medial Border- 2-3 CM from the center of the board
- Prone Breast + Board should be used to create ROI
  - Use board contour as an index and move patient in/out
  - Breast tissue should be included

Current ROI Example





Average Shifts

VRT	.34
LNG	.50
LAT	.63
PITCH	1.50
ROLL	.81
YAW	.94
TIME	10 Mins

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Overall Shift Improvements

VRT	0.60
LNG	0.70
LAT	0.40
PITCH	1.08
ROLL	0.40
YAW	1.46
TIME	Cut treatment time by 2 mins per patient

Per Company Policy we should re-image the patient if shifts are greater then 1. With the help of align RT we now re-image only 20 % of our prone patients daily

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Clinical Experience

Advent health celebration is now a center of excellence! We received our tattoo less award 11/24

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Conclusion

Align Rt has helped improve prone breast set-ups within our department by eliminating overall shifts and re-imaging patients

Change isn't always immediate and sometimes it takes having to go back to the drawing board to make positive change. Trust the process and the equipment.

Special thanks to this amazing team for always agreeing to all our science projects thought this process.

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Questions?

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Extending the Healing Ministry of Christ