Optimization of CT Simulation Imaging

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Learning Objectives

1. Understand CT image quality needs specific to imaging applications in radiation therapy
2. Learn the imaging acquisition and reconstruction optimization for CT imaging applications in radiation therapy
3. Discuss appropriate approaches to optimize CT protocols in radiation therapy

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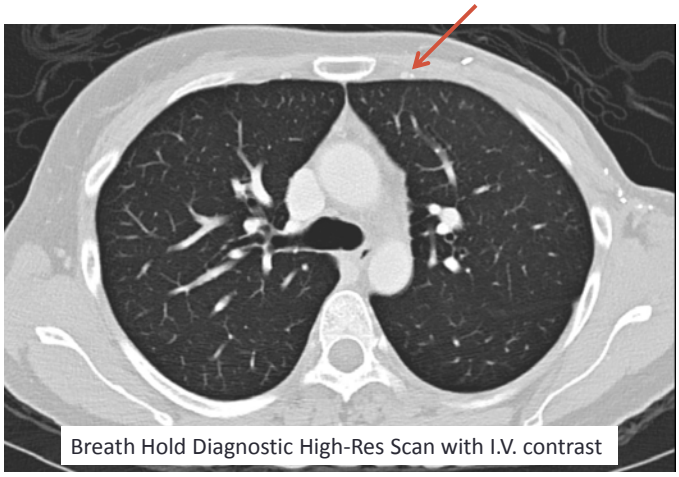
Optimizing simulation CT images for RT

1. How to improve visualization of internal mammary nodes (IMN) for breast planning?
2. How to reduce metal artifacts from brachytherapy applicators?
3. How to reduce dose for a pediatric simulation?

Task 1:
Visualization of Internal mammary nodes (IMN)



Breath Hold Diagnostic High-Res Scan with I.V. contrast

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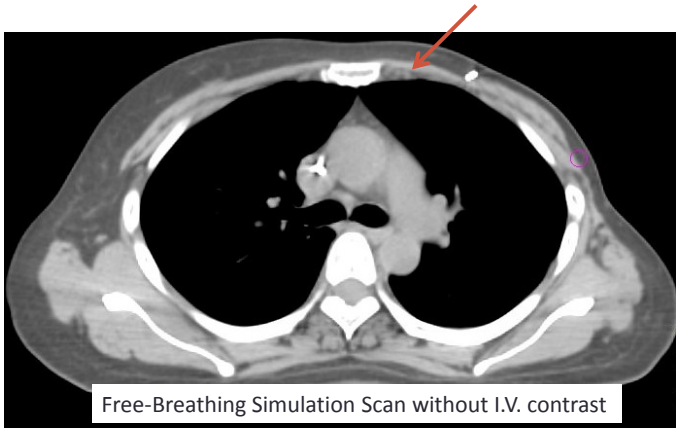
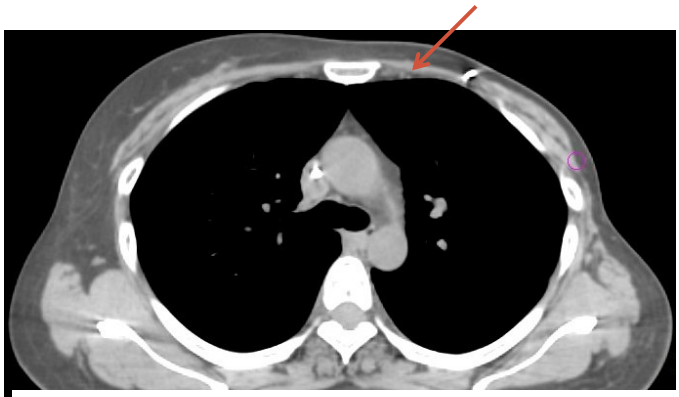
Visualization of Internal mammary nodes (IMN)



Free-Breathing Simulation Scan without I.V. contrast

Task 1:
Visualization of Internal mammary nodes (IMN)



Deep Inspiration Breath Hold Simulation Scan without I.V. contrast

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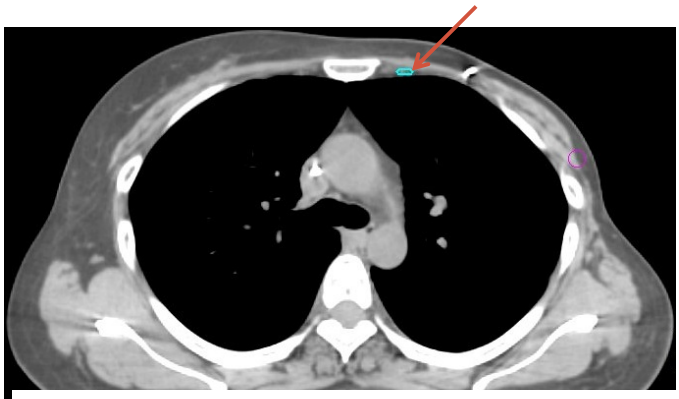
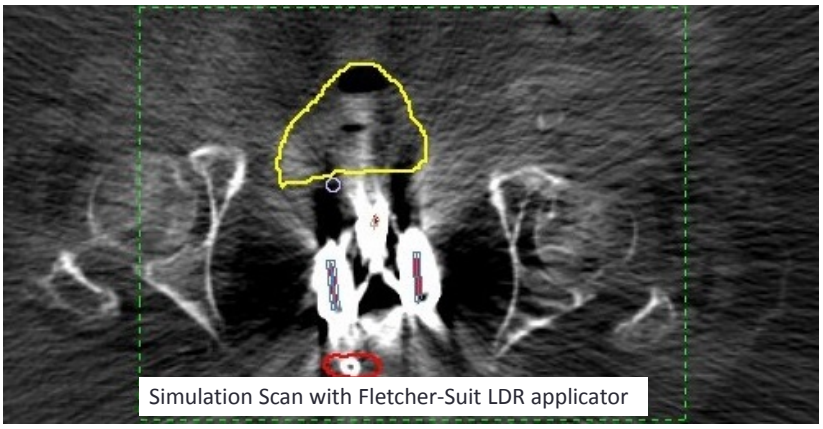
Visualization of Internal mammary nodes (IMN)



Deep Inspiration Breath Hold Simulation Scan without I.V. contrast

Task 1:
Visualization of Internal mammary nodes (IMN)

Task 2:
Artifact reduction for brachytherapy scans



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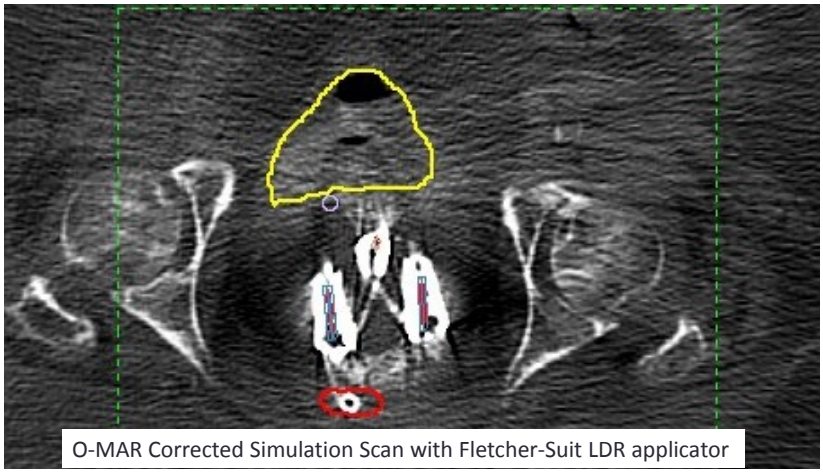
Artifact reduction for brachytherapy scans



O-MAR Corrected Simulation Scan with Fletcher-Suit LDR applicator

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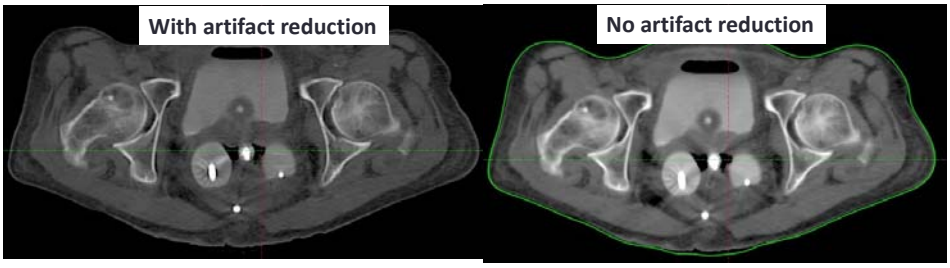
Artifact reduction for brachytherapy scans



Simulation Scan with Fletcher-Suit HDR titanium applicator

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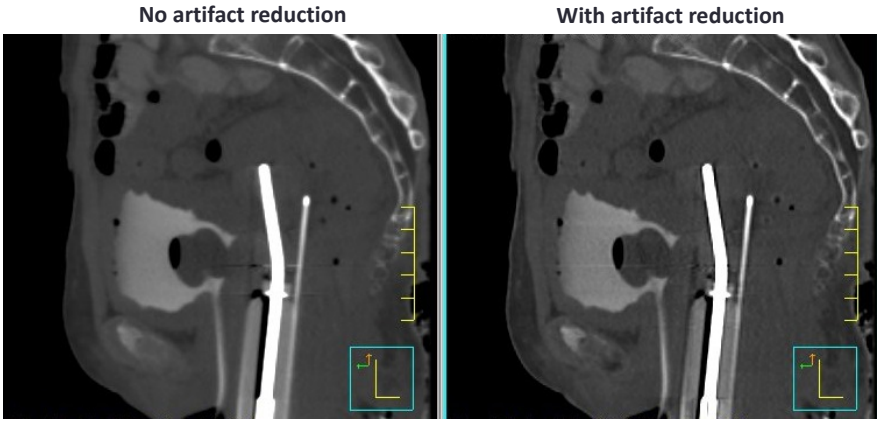
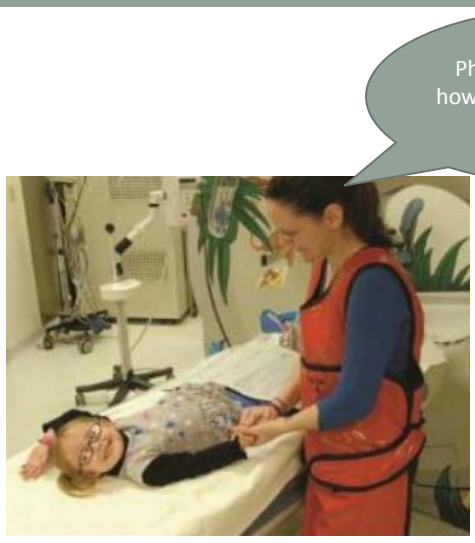
Artifact reduction for brachytherapy scans



Simulation Scan with Fletcher-Suit HDR titanium applicator

Task 3:
Reduction of dose for pediatric patient



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