

Routine Pulmonary CTA with Iodine Mapping

"Subtraction imaging adds diagnostic power to the routine evaluation of patients undergoing pulmonary CTA examinations."

Mathias Prokop, M.D., Ph.D.

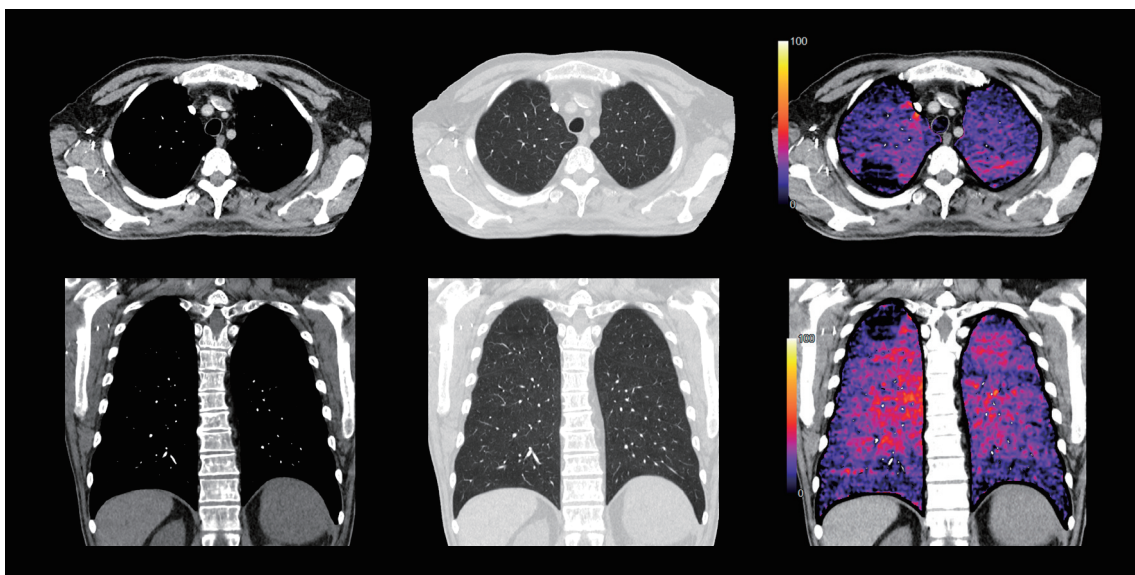
Professor and Chairman of Radiology and Nuclear Medicine
Radboud University Medical Center
Nijmegen, the Netherlands



Patient History

A 67-year-old man presented to the emergency department with dyspnea. A CTA examination of the pulmonary arteries was requested to rule out pulmonary embolism as the cause of his symptoms.

Results



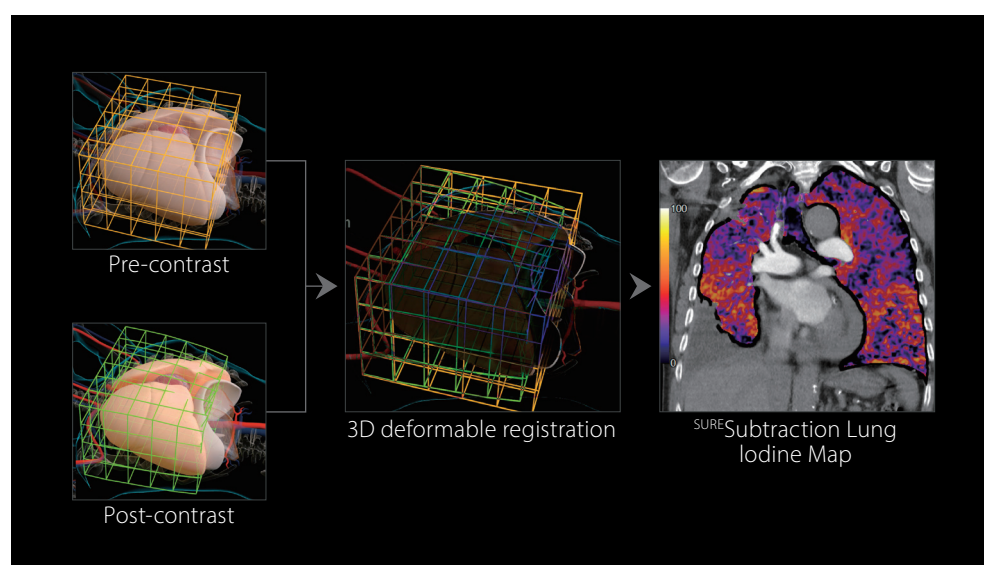
Decreased contrast enhancement in the right apical lung segment as shown on the color iodine maps indicates decreased perfusion. This is consistent with the patient's clinical presentation of pulmonary embolic disease.

Technology

Utilizing a pre- and post-contrast scan, the ^{SURE}Subtraction™ Lung application isolates the iodine signal and displays the result as a color overlay.

A dedicated scan mode synchronizes the pre- and post-contrast scans and automatically outputs iodine maps directly to the reading station with no need for additional user interaction.

The key to obtaining accurate results lies with an anatomically aware 3D deformable registration algorithm that compensates for patient motion which may occur between the two scans. This ensures highly accurate iodine signal extraction, with the result superimposed on the post-contrast CTA image as a color overlay to clearly demonstrate even subtle differences in HU attenuation.



Conclusion

The addition of iodine maps to pulmonary CTA enables the assessment of the distribution of contrast media in the pulmonary parenchyma. ^{SURE}Subtraction Lung can automatically provide iodine maps in every routine pulmonary CTA examination.

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Acquisition

Scanner Model:
Aquilion ONE™ / GENESIS Edition

Scan Mode:	Ultra Helical
Collimation:	0.5 mm x 80
Exposure:	100 kV ^{SURE} Exposure™
Rotation Time:	0.275 second
Dose Reduction:	AIDR ^{*1} 3D Enhanced
CTDI:	1.6 mGy pre-contrast/ 3.2 mGy post-contrast
DLP:	Total 183.9 mGy·cm
Effective Dose:	2.57 mSv
k-factor:	0.014 ^{*2}

^{*1} Adaptive Iterative Dose Reduction

^{*2} American Association of Physicists in
Medicine (AAPM) Report 96, 2008.

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