

Hematoma visualized with SEMAR

"SEMAR offers very effective metal artifact suppression, which enables the implant, as well as the surrounding tissue, to be better visualized. Pathology in the direct vicinity of metallic implants can now be observed, which was previously difficult."

Professor Dr. Hans-Bjorn Gehl

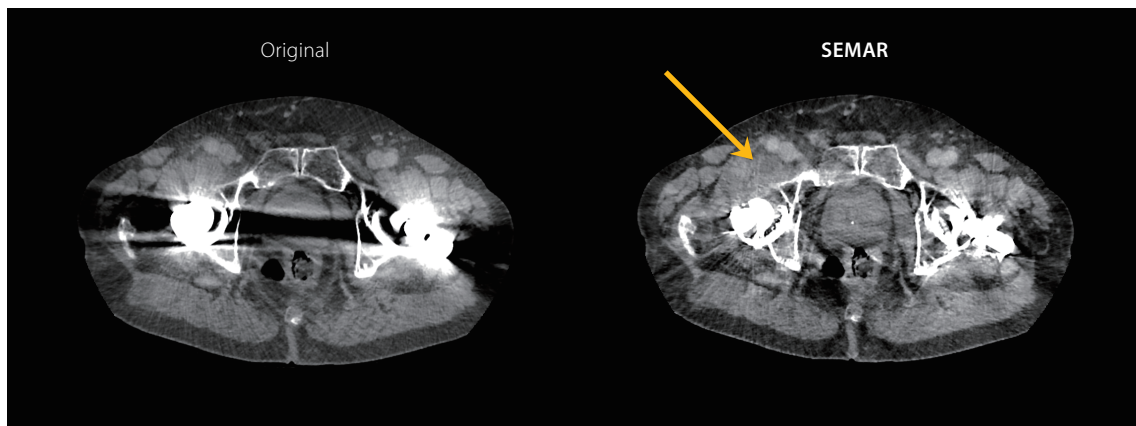
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Patient History

A 73-year-old man presented with ongoing pain in the right groin following a hip replacement 3 months ago. The patient was referred for an abdomen and pelvis CT scan after other imaging tests, including conventional X-ray and ultrasound, could not determine the cause of the pain.

Results

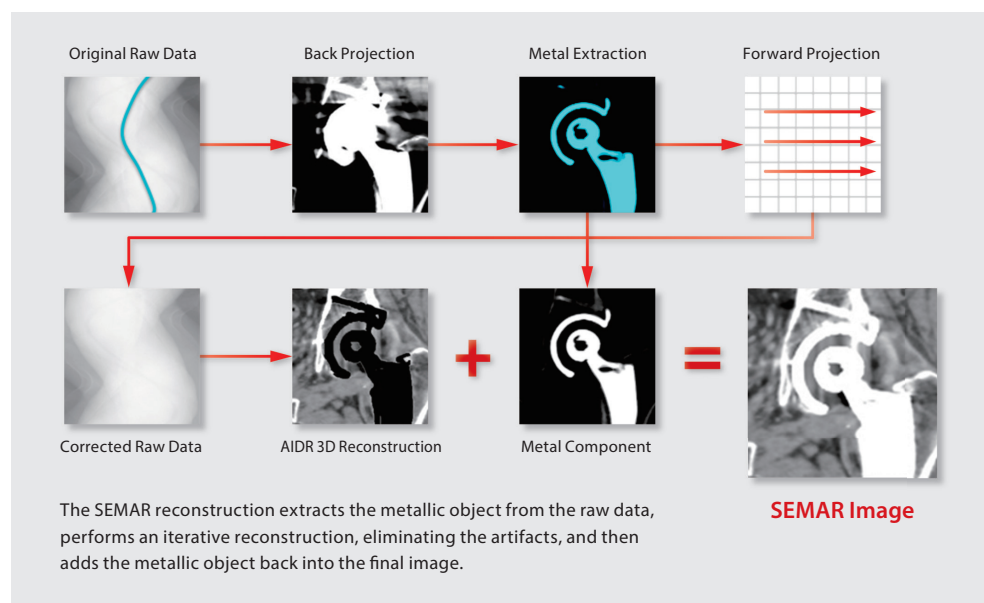


A post operative hematoma collection was seen in the right groin (arrow) and was better visualized with the Single Energy Metal Artifact Reduction (SEMAR) reconstruction images. Other nearby structures such as the prostate are better visualized on the SEMAR reconstruction.

Technology

Our innovative SEMAR algorithm utilizes a sophisticated reconstruction technique to remove artifacts caused by metal and improves visualization of the implant, supporting bone and adjacent soft tissues for clearer and more confident diagnoses. As metallic implants should no longer be a barrier to routine diagnosis, SEMAR is included as a standard feature on all Aquilion CT scanners.

SEMAR Algorithm



Conclusion

SEMAR reconstruction is able to reduce metal artifacts to reveal pathology not visible with conventional CT reconstruction.

Acquisition

Scanner Model:	Aquilion Lightning
Scan Mode:	Helical
Collimation:	0.5 mm x 80
Exposure:	120 kV, ^{SURE} Exposure
Rotation time:	0.5 second
Dose Reduction:	AIDR ^{*1} 3D Enhanced
CTDI:	11.4 mGy
DLP:	534.1 mGy·cm
Effective Dose:	8.01 mSv
k-factor:	0.015 ^{*2}

^{*1} Adaptive Iterative Dose Reduction

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

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Clinical results may vary due to clinical setting, patient presentation and other factors.

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