

Enhancing Diagnostic Confidence: Unleashing the Power of Iodine Mapping for Differential Diagnosis

"Color iodine mapping has proven to be an invaluable tool in our daily workflow at our busy medical institution, where we interpret up to 300 CT scans a day. By providing detailed visualization of iodine distribution, this advanced imaging technique saves us time and significantly enhances our diagnostic confidence, enabling us to make precise assessments and improve patient care."

Dr. Vo Nguyen Thanh Nhan
Chief of CT Department

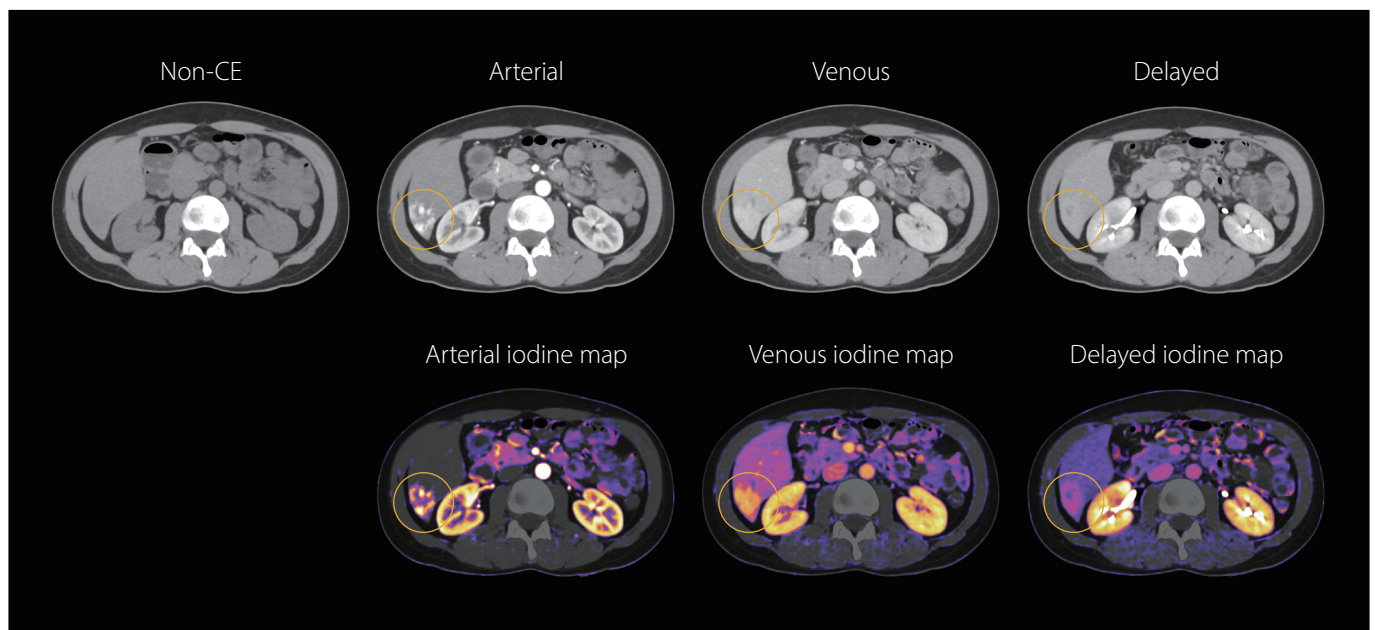
Medic Medical Center, Ho Chi Minh City, Vietnam



Patient History

A 38-year-old male arrived for a multiphase abdominal scan. Iodine maps were reconstructed in the background and were automatically sent from the CT scanner to PACS for immediate review.

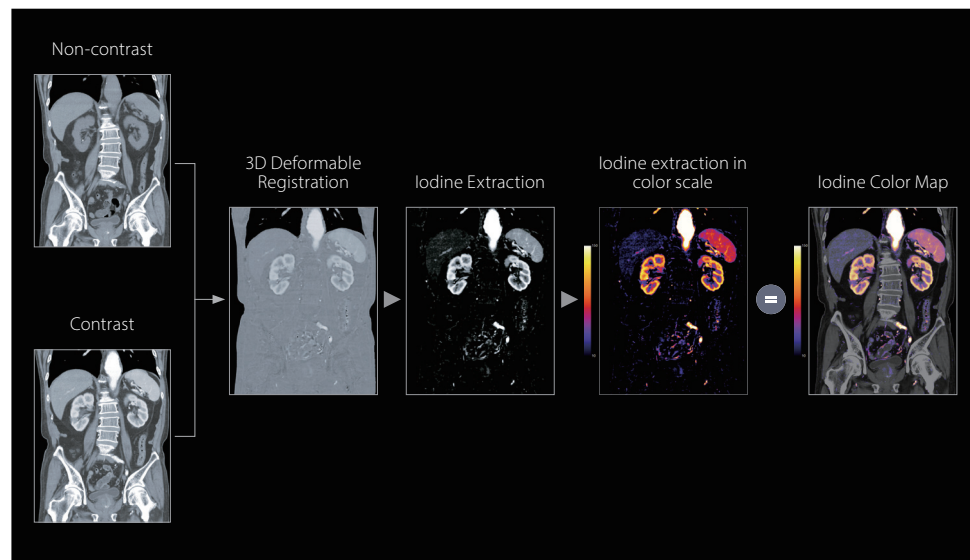
Results



The gray scale images show a lesion in the liver that is hypervascular in the arterial phase and appears to show a 'washout' pattern in the venous and delayed phase. However, the iodine map images clearly show the lesion retains contrast, a finding consistent with hemangioma rather than Hepatocellular Carcinoma (HCC). The iodine maps in this case increase the confidence in the differential diagnosis of this lesion.

Technology

Iodine mapping SCT is made possible by an advanced 3D deformable registration algorithm that compensates for patient motion, ensuring highly accurate iodine signal extraction. This algorithm extracts iodine contrast media, represents it in vivid color, and seamlessly fuses it with the contrast-enhanced image to generate an iodine color map.



Conclusion

The utilization of iodine mapping in multiphase oncology imaging provides additional information when distinguishing hypervascular lesions that have similar arterial phase enhancement. The iodine maps in this case demonstrate the retention of contrast throughout the venous and delayed phases, ruling out Hepatocellular Carcinoma (HCC) and strengthening the diagnostic confidence for a hemangioma.

This valuable information underscores the significance of iodine mapping in daily oncology reporting, highlighting the added value and assurance it brings to radiologists.

Canon Medical's comprehensive portfolio of CT scanners can be equipped with this unique package, enabling iodine maps for any single source, single energy, multiphase protocol that includes a pre-contrast scan.

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Clinical results may vary due to clinical settings, patient preparation, and other factors. The views and opinions expressed in this brochure are those of the clinicians and do not necessarily reflect the views of Canon Medical Systems.

Acquisition

Scanner Model:	Aquilion Serve
Scan Mode:	Ultral Helical Subtraction
Collimation:	0.5mm x 80
Exposure:	120 kV, ^{SURE} Exposure
Rotation Time:	0.5 s
CTDIvol:	4.8, 4.8, 4.8, 4.8 mGy
DLP:	876 mGy-cm
Effective Dose:	13.14 mSv
k-factor:	0.015*

Key Benefits

- Differentiate hypervascular arterial lesions
- Display local iodine concentration
- Detect/rule out contrast enhancement
- Detect local perfusion differences

* American Association of Physicists in Medicine (AAPM) Report 96, 2008.

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