

Fusion only renal infarct

Philips EPIQ image fusion and navigation case study

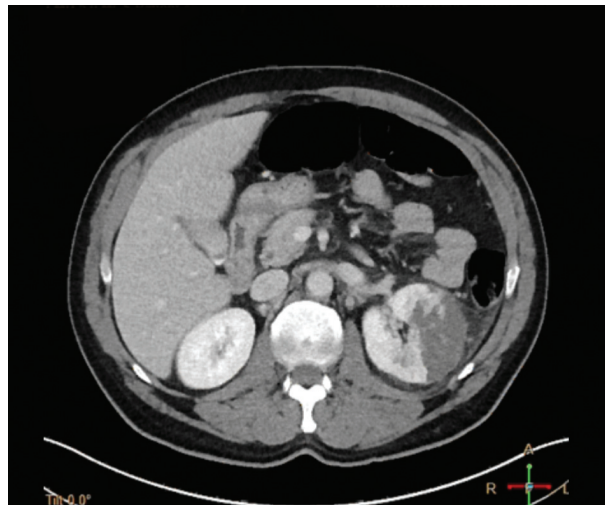
It is often the case where one imaging modality is used for front line screening, and followed up with another. Each imaging modality possesses inherent benefits that may work together to arrive at, or further qualify, a clinical diagnosis.

It is the complimentary nature of imaging that forms the basis of fusion imaging, available on the Philips EPIQ ultrasound system.

Philips image fusion and navigation technology demonstrates its clinical utility for image fusion by further characterizing a clinical diagnosis from an imaging modality, to assist in directing an appropriate plan of care.

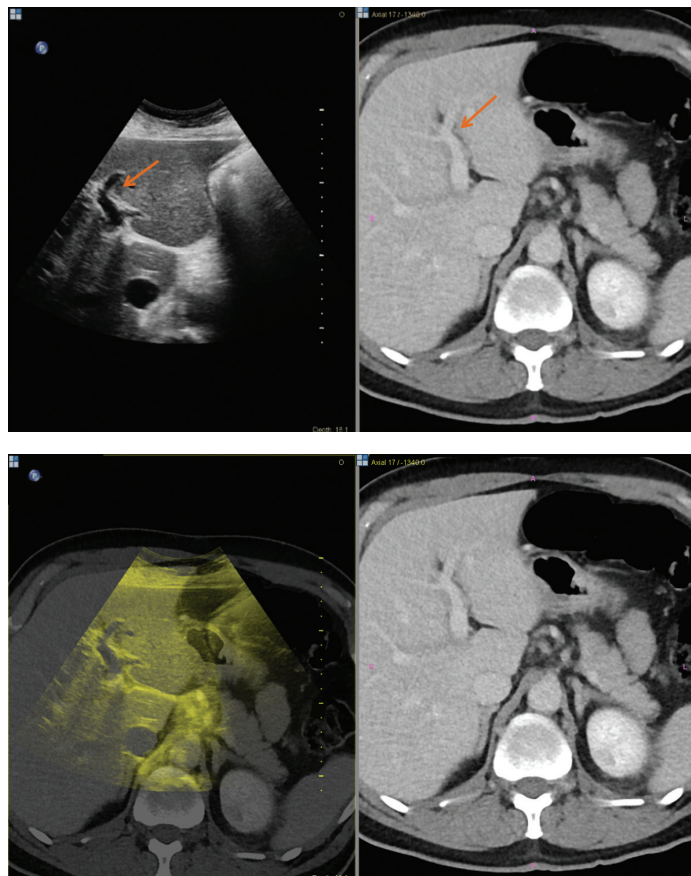
Patient history

A 52-year-old patient presented with acute abdominal pain, post cardiac catheterization – calling for a contrast enhanced CT scan drawing focus to a hypo-enhanced area on the left kidney with irregular borders, which was determined to be necrotic.

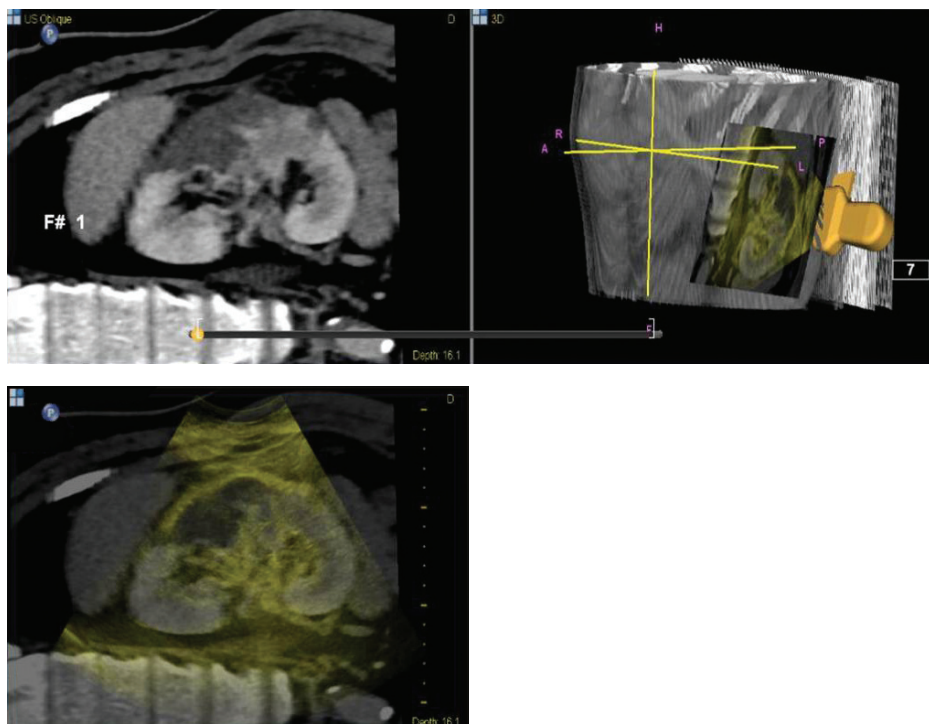


This is not an uncommon occurrence post cardiac catheterization as small plaques can be dislodged and occlude the small vessels within the kidney. This CT scan was imported into the Philips EPIQ system for fusion with contrast enhanced ultrasound on a follow up study to evaluate its progression.

The ultrasound transducer was placed transverse on the abdomen, and matched to an axial image from the CT dataset using a portal vein bifurcation as the reference landmark.



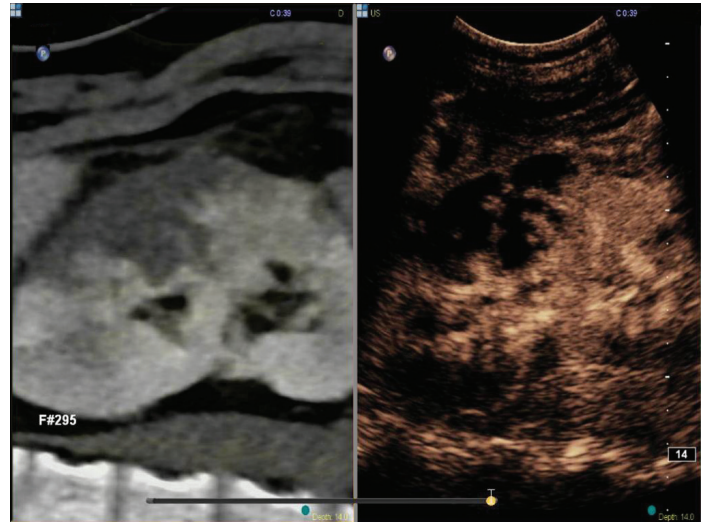
Once the two imaging planes were matched, a reconstructed CT image was displayed and updated in real time with the position of the ultrasound transducer.



This, in combination with the live ultrasound image, enabled the physician to further assess the area of interest with contrast administration.

Sonovue was administered intravenously and flushed with a bolus of saline. Immediate hyper enhancement is demonstrated in the renal parenchyma, with a great perfusion defect in the middle third of the left kidney, which appears to be more stressed peripherally.

Contrast enhanced ultrasound (CEUS) demonstrated an uptake pattern consistent with peripheral renal infarct, as well as to rule out any presence of active bleeding within. Fusion imaging between the initial CT with CEUS in this case, enabled the physician to assess the extent of necrosis to assess its progression.



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