



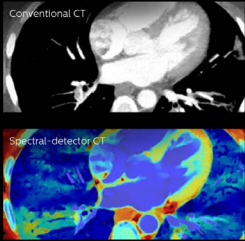
It's not just CT.
It's spectral-detector CT.

Diagnostic certainty

These cases show the value that spectral-detector CT can bring.

There is no need to preselect patients for spectral-detector scanning. A single scan for fast, low-dose conventional and spectral data gives you results that are always available on-demand, even retrospectively. You may be able to reduce the need for follow-up scanning for sub-optimal exams and incidental findings because spectral-detector CT offers improved tissue characterization and visualization.

Mystery diagnosis cases



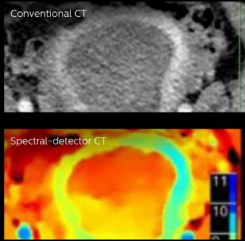
Conventional CT

Spectral-detector CT

**See beyond
conventional CT**

Experience the simplicity
of spectral-detector CT

Case **#1**



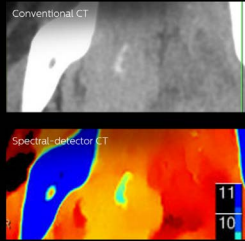
Conventional CT

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Case **#2**



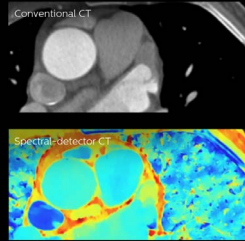
Conventional CT

Spectral-detector CT

**See beyond
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Case **#3**



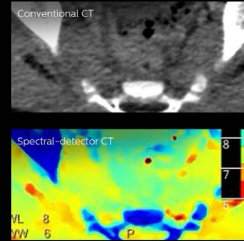
Conventional CT

Spectral-detector CT

**See beyond
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Experience the simplicity
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Case **#4**



Conventional CT

Spectral-detector CT

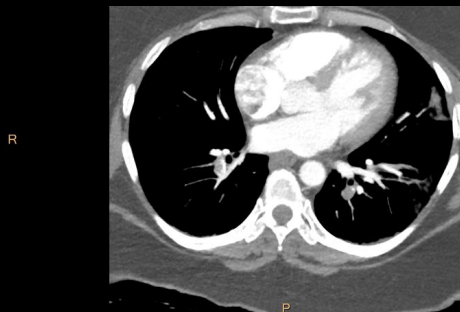
**See beyond
conventional CT**

Experience the simplicity
of spectral-detector CT

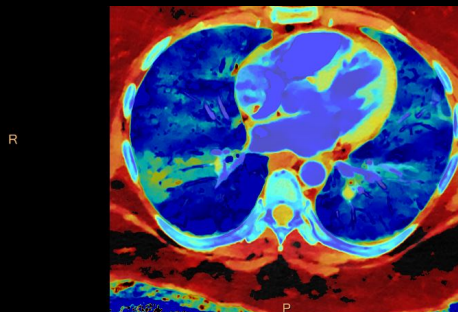
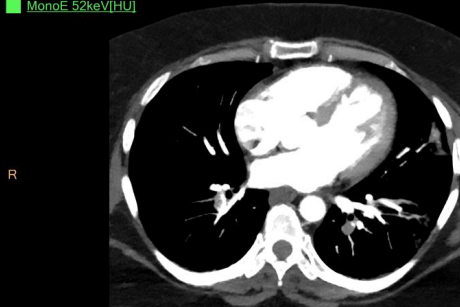
Case **#5**

Chest for PE

Spectral-detector CT



■ MonoE 52keV[HL]



● Iodine Density [mg/ml]



Clinical benefit

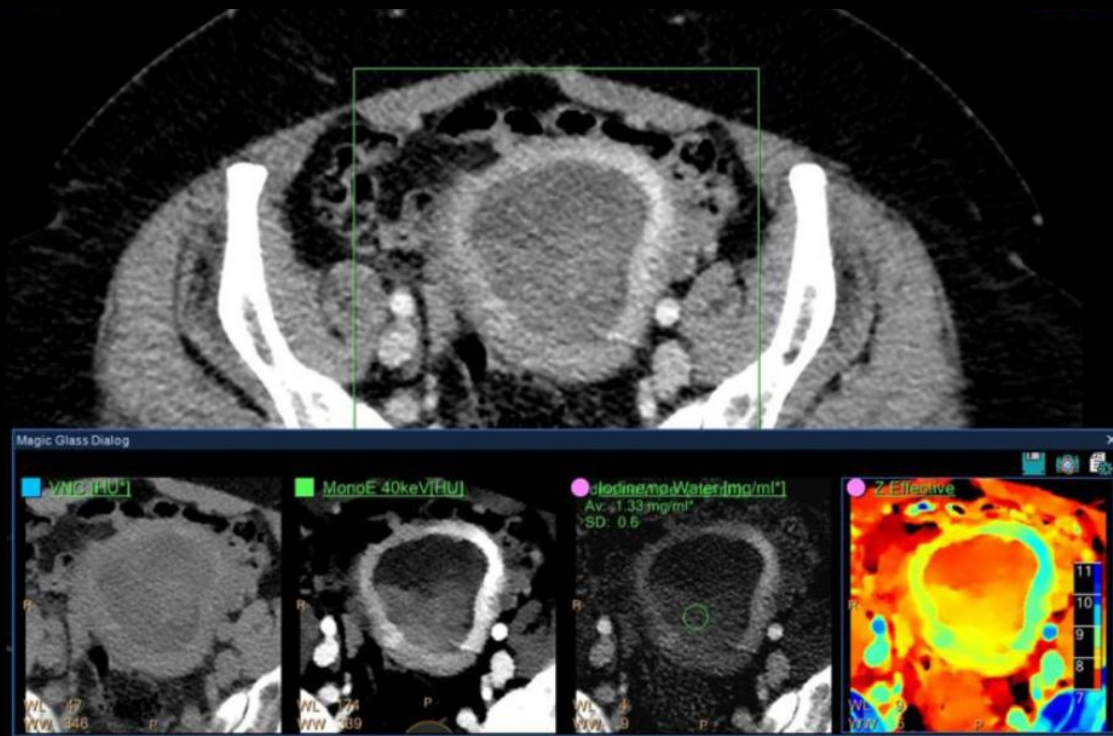
- The ability to review multiple spectral results with a single acquisition provides the clinician the tools needed to make a more informed decision on treatment.

Case summary

- Patient seen in the ED following a syncopal episode and hypotension.
- CT of chest was ordered that was positive for a PE.

Abdomen pelvis

Spectral-detector CT



Clinical benefit

- Having multiple results allows the radiologist to improve their diagnostic confidence by quantifying the area of anatomy.

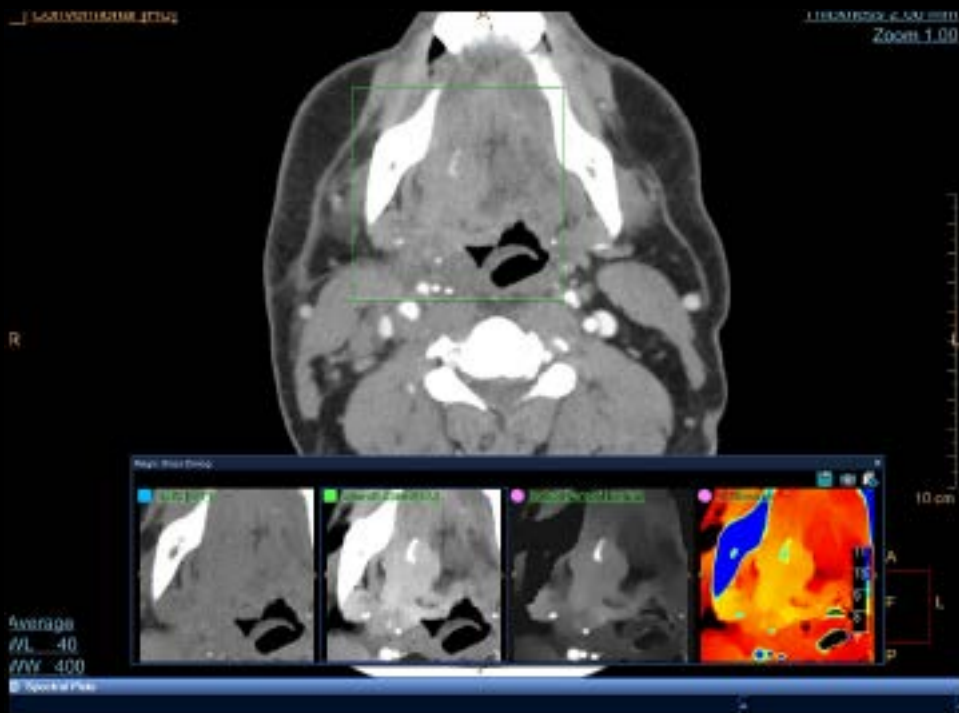
Case summary

- On conventional CT, an enlarged inhomogeneous area was seen in the pelvis.
- Question if it was endometriosis or a lesion.
- Spectral results showed enhancement of area, and a biopsy confirmed that the patient had endometrial cancer.

#3

Neck mass

Spectral-detector CT



Clinical benefit

- Spectral-detector CT and Magic Glass provide the ability to view multiple spectral results and compare multiple spectral results.

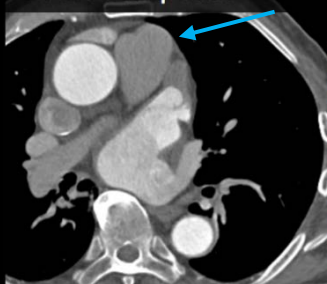
Case summary

- Enhancing lesion at the base of tongue difficult to detect with conventional CT images
 - CTDIvol: 11.3 mGy
 - DLP: 334.9 mGy*cm

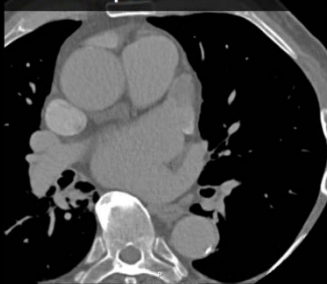
Left atrial appendage

Spectral-detector CT

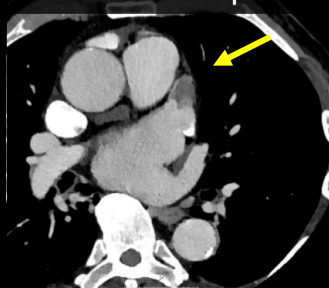
CI: arterial phase



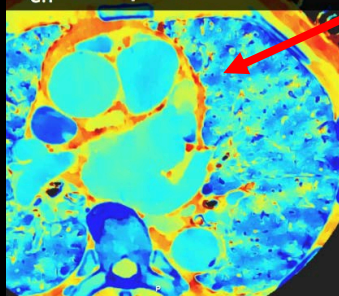
CI: late phase



40keV VMI: late phase



Z_{eff}: late phase



Clinical benefit

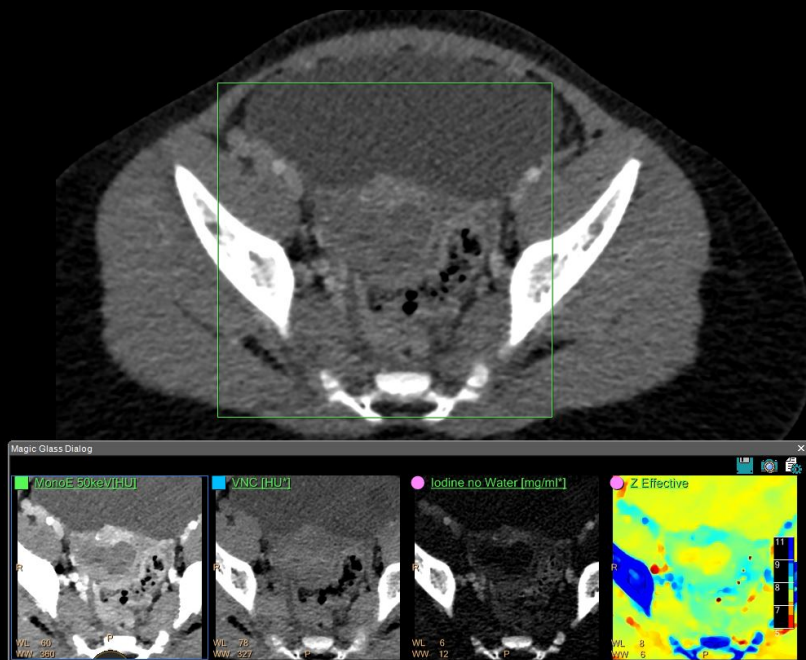
- Spectral results can be beneficial in the planning and patient selection for interventional and surgical procedures.

Case summary

- Conventional, arterial images demonstrate a filling defect in the anterior aspect of the left atrial appendage (upper image, blue arrow); the defect may be related to thrombus or circulatory stasis.
- The delayed scan (as per protocol) has a very washed-out appearance which makes interpretation for thrombus difficult (lower left image).
- The corresponding MonoE and Z effective images from the delayed phase confirm presence of a thrombus in the left atrial appendage (yellow and red arrows), which is a contraindication to the procedure.

Pediatric abdomen

Spectral-detector CT



Clinical benefit

- Low MonoE images improved the visualization of the vascular structures and the necrotic area of the pelvis.
- This an example of experiencing improved diagnostic capabilities even in a patient who would not have been preselected for dual-energy techniques.

Case summary

- Pediatric patient with worsening abdominal pain received an abdomen pelvis scan with IV contrast.
- Low MonoE images identify a right ovarian torsion, which was confirmed with ultrasound.

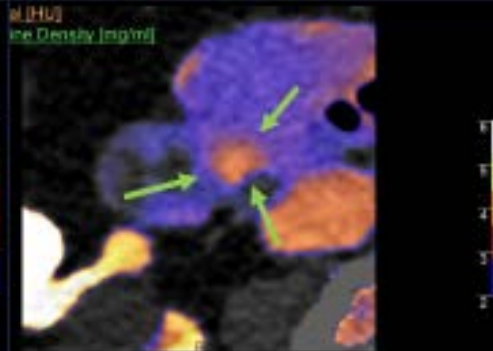
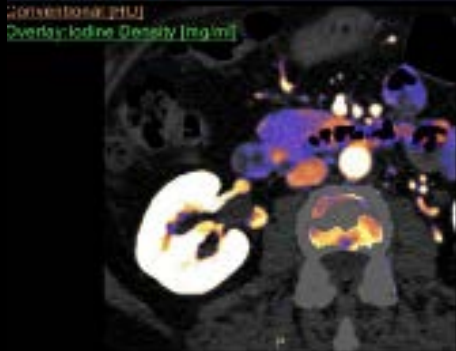
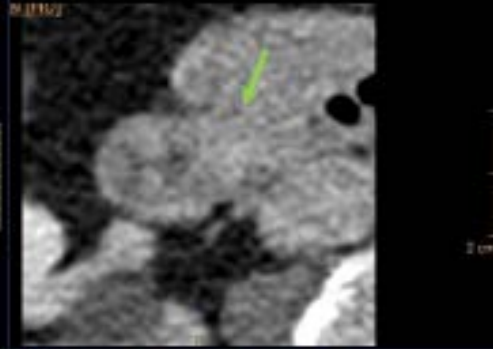
Other cases

Abdomen and pelvis

Spectral-detector CT

Conventional

Conventional



Iodine density overlay

Iodine density overlay

Clinical benefit

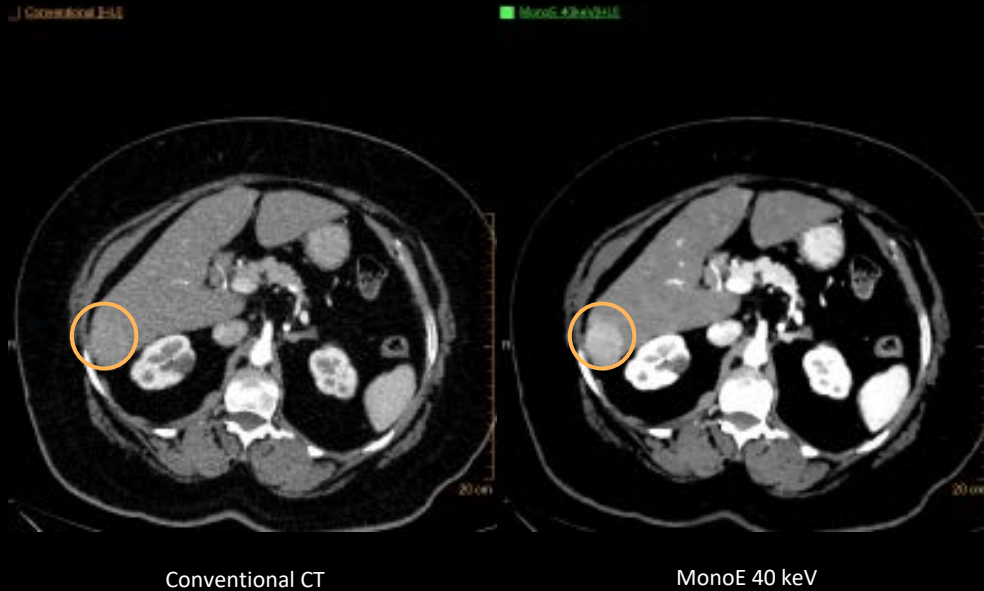
- Shortest time to diagnosis.

Case summary

- Female patient presented complaining of abdominal pain.
- With conventional results, a pancreatic duct appears to be dilated.
- With Iodine density overlay, a tumor is visible in the head of pancreas and patient was referred for an endoscopic ultrasound biopsy, which showed a tubular adenoma of the Ampulla of Vater.

Abdomen and pelvis

Spectral-detector CT



Clinical benefit

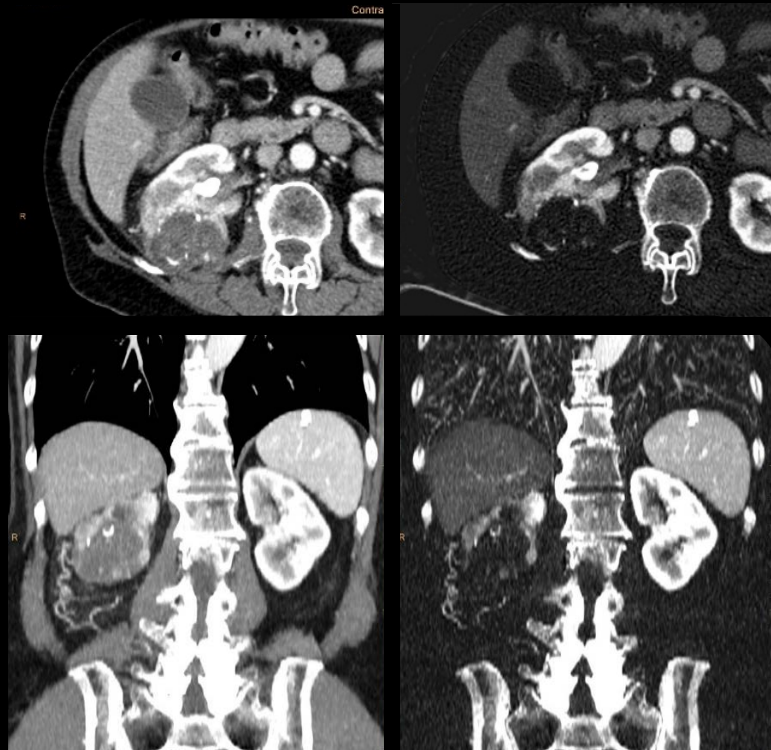
- Improved visualization of a hepatic lesion with low MonoE results.

Case summary

- Evaluation and staging of the progression of hepatic cell carcinoma.

Abdomen follow-up

Spectral-detector CT



Conventional CT

Iodine no Water

Clinical benefit

- Multiple spectral results with every scan.

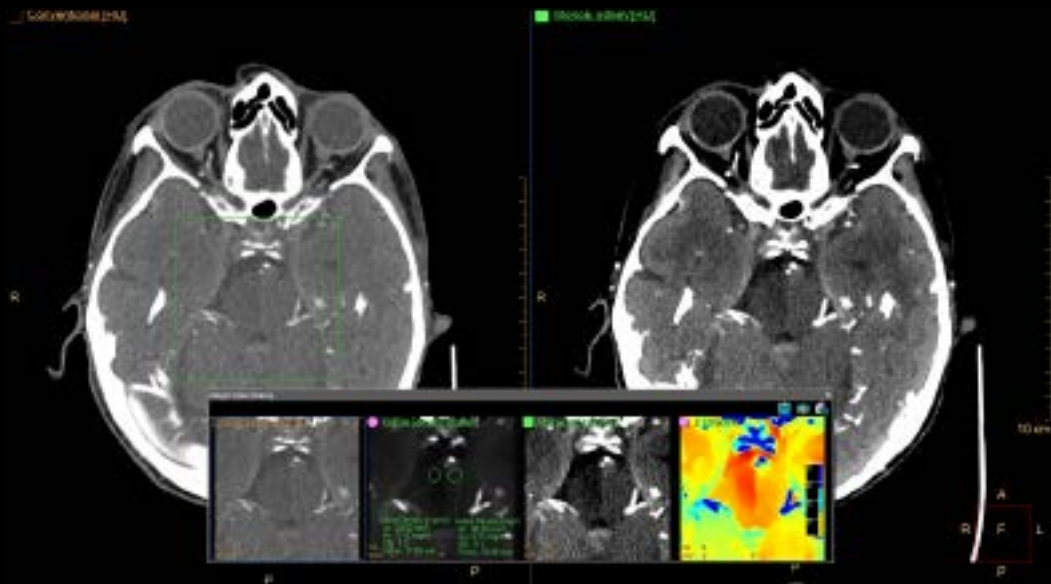
Case summary

- History of renal cell carcinoma and a sustained response to pazopanib therapy.
- Iodine no Water spectral result demonstrated continued lack of iodine in the majority of the lesion, confirming response to therapy.

Neuro

Spectral-detector CT

Brain



Clinical benefit

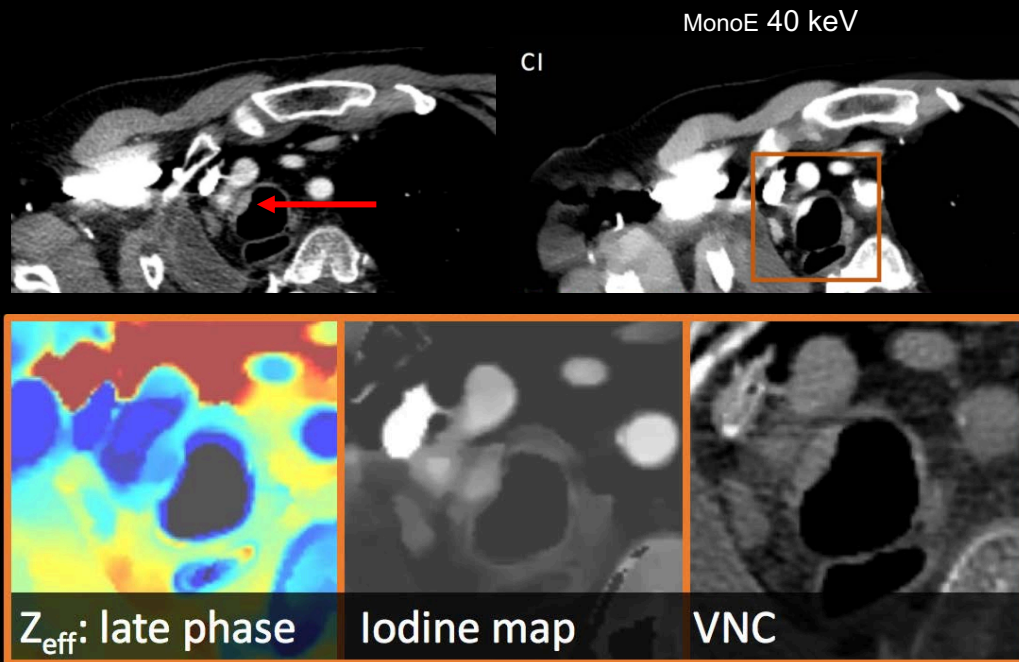
- Spectral Magic Glass allows for the simultaneous comparison of multiple spectral results for a specific region of interest.

Case summary

- Patient presented to ED with symptoms of an acute stroke, and was referred to CT.
- Low MonoE improved the visualization of the perfusion defect in the pons.

Indeterminate tracheal lesion

Spectral-detector CT



Clinical benefit

- Spectral-detector CT can serve as a problem-solving tool in onco-imaging and help in reaching the diagnosis.

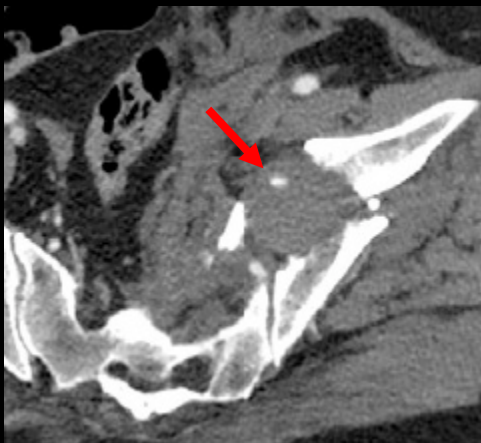
Case summary

- Patient status post right-pneumonectomy for small cell lung cancer.
- Two-year follow-up conventional CT images (top left) shows a new hyper-attenuating focus along the right anterolateral aspect of the upper trachea, which was initially thought to be mucous material.
- Combination of 40 keV images and additional spectral reconstructions demonstrate contrast enhancement within the tracheal lesion consistent with tumor recurrence.
- Confirmed by subsequent biopsy.

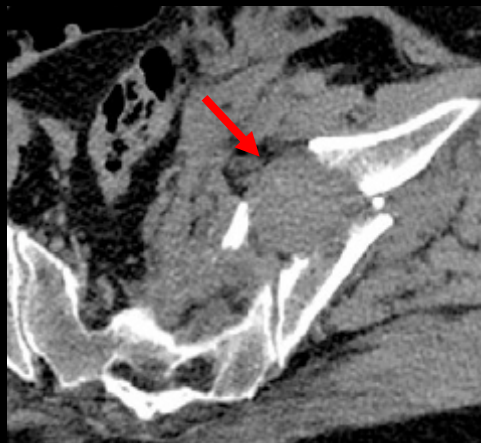
MSK

MSK

Spectral-detector CT



Conventional



Virtual non-contrast

Clinical benefit

- Improved visualization with Virtual non-contrast spectral result.

Case summary

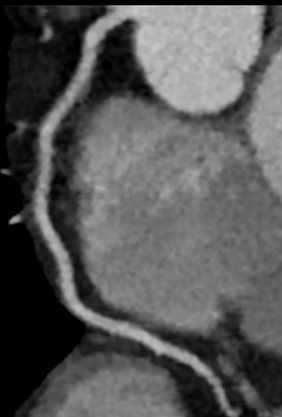
- Conventional CT reconstruction demonstrates comminuted left iliac fractures, and a 5 mm hyperdense focus adjacent to the dominant bone fragments (arrow).
- Unclear if this represented a shard of bone versus active extravasation of contrast.
- Virtual non-contrast reconstruction demonstrates suppression of this dense focus, confirming the presence of iodine and active hemorrhage.
- Acute fracture with active hemorrhage.
- Patient was brought to IR suite and this finding was confirmed.

Cardiac/CTA

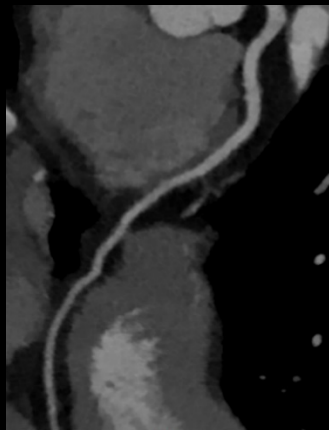
Cardiac

Spectral-detector CT

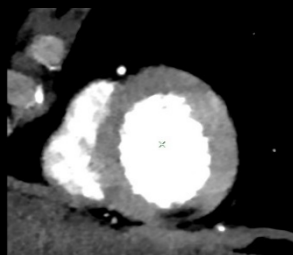
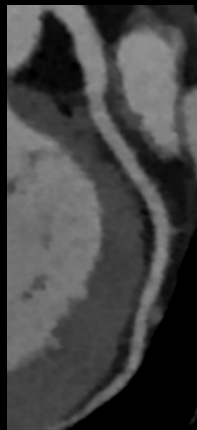
C-MPR RCA



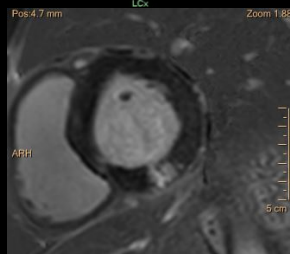
C-MPR LAD



C-MPR LCx



MonoE
Short Axis



MRI

Clinical benefit

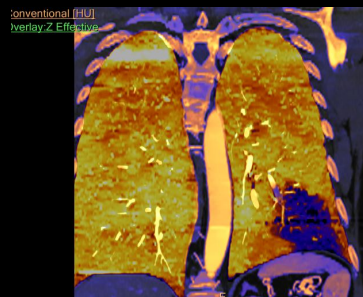
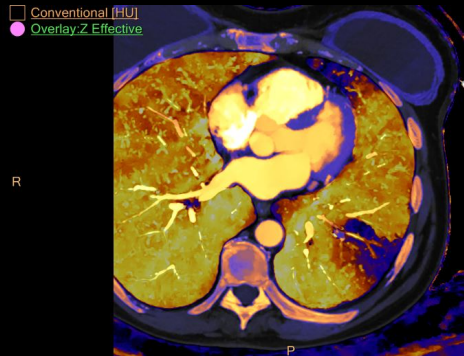
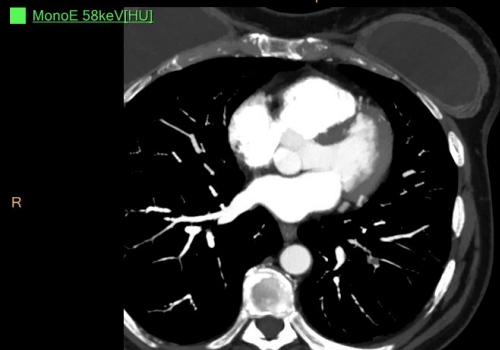
- Gated spectral cardiac scan.

Case summary

- Patient presented with atypical chest pain.
- EKG showed suspected inferior wall infarction, and lab work showed elevated troponins.
- Myocarditis was a suspected diagnosis.
- A gated cardiac CTA was performed and showed normal coronary arteries.
- However, the clinician noticed a suspicious area that was questionable for an infarct in the inferior wall of the myocardium.
- MR confirmed infarct in inferior wall.

Chest for PE

Spectral-detector CT



Clinical benefit

- Spectral-detector results aid when evaluating a chest for a suspected PE and can provide additional clinical benefits to make the right diagnosis with the first scan.

Case summary

- Patient admitted through the ED with shortness of breath and chest discomfort.
- The injection timing was not optimal for a PE study so fused spectral results were reviewed.
- Radiologist identified the perfusion defect in the left lower lung and a small PE using Z effective fused.

