

Dual Source CT Lung Vessel imaging with Dual Energy

SOMATOM Definition Dual Energy scanning

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HISTORY

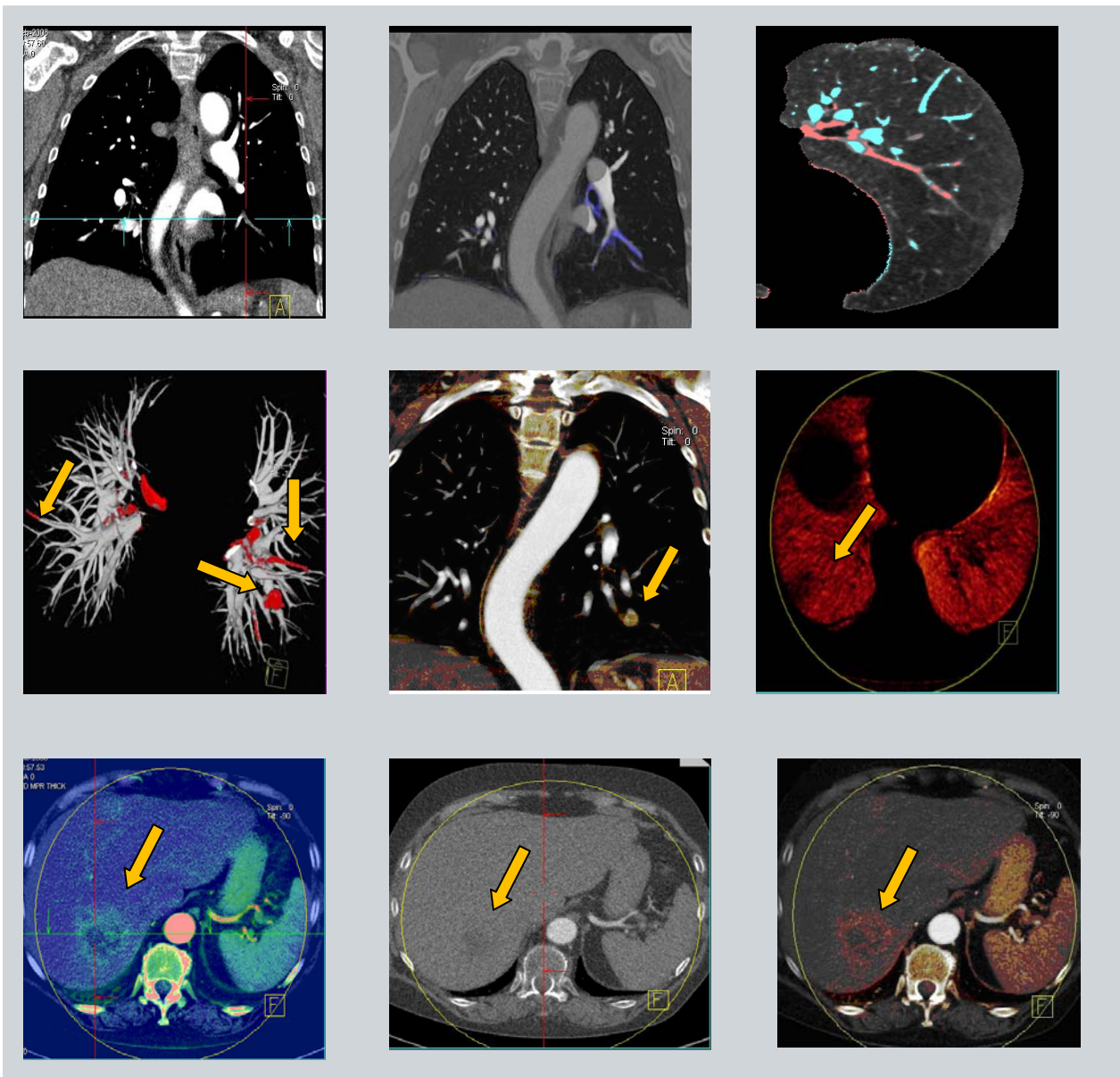
A 68 year old woman was diagnosed with vaginal, nodal, pulmonary, and hepatic recurrence of curatively treated endometrial cancer in September 2007. She has been receiving systemic chemotherapy with palliative intention for 4 months, when she presented with deep venous thrombosis and shortness of breath to the emergency room. She was referred to pulmonary CT angiography to rule out pulmonary embolism.

DIAGNOSIS

Pulmonary embolism in the left lower lobe was identified at pulmonary CT angiography . In addition, at Dual Energy the Lung Vessel analysis showed irregular perfusion in the referring vessel indicating incomplete occlusion . Lung Vessel and Lung PBV analysis showed a small perfusion defect in the right lower lobe where CTA could not reliably exclude emboli in subsegmental arteries. The previously known lung nodule presented well enhanced. Liver VNC analysis of those parts of the liver within the scan field revealed a halo-like enhancement pattern of the known metastasis .

COMMENTS

Dual Energy lung analysis may add important information about the perfusion status of the parenchyma and both when CTA could and could not reliably confirm pulmonary embolism. Although the contrast protocol was not suitable for adequate liver examination an accurate depiction of the tumour was facilitated utilizing the Dual Energy iodine information with Liver VNC compared to the regular gray scale images. The potential of Dual Energy in oncology will have to be a topic of research.



EXAMINATION PROTOCOL

<i>Scanner</i>	<i>SOMATOM Definition</i>
Scan area	<i>Thorax</i>
Scan length	<i>216mm</i>
Scan time	<i>9s</i>
Scan direction	<i>Cranio-Caudal</i>
kV	<i>140 / 80 kV</i>
Effective mAs	<i>67 / 344 eff mAs</i>
Rotation time	<i>0.5s</i>
Slice collimation	<i>0,6mm</i>
Reconstructed slice thickness	<i>1mm</i>
Increment	<i>0.5mm</i>
Kernel	<i>B30f</i>

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