SOMATOM Definition Dual Energy scanning

Head CTA brain hemorrhage examination

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HISTORY

Due to suddenly occurring and continuing loss of consciousness during a sojourn in the forest, a 71-year-old female was admitted to the University Hospital in Pilsen for a suspected brain aneurysm rupture.
Her past medical history showed a thromboembolism treated with anti-coagulant therapy.
A brain CT was conducted immediately.

DIAGNOSIS

A non-contrast brain CT showed an acute subarachnoideal bleeding in the left hemisphere. In order to affirm or disprove a ruptured aneurysm, a head CTA with Dual Energy was performed. This technology allows better visualization and easier localization of brain hemorrhages. The virtual non - contrast image showed acute extensive bleeding with same high quality as conventional non contrast CT. An examination with Dual Energy, using both tubes with different currents (140kV/80kV) makes it possible to accurately detect and localize the origin of the bleeding.

COMMENTS

For an angiographic coiling treatment, knowing the exact localization of bleeding in the brain is saving advantage.
Due to the different tube currents of 140kV and 80kV, it is possible to ascertain the exact Houndsfield (HU)-values. *syngo* Dual Energy color codes the iodine enhancement and a virtual non contrast can always be generated from a contrast enhanced study.
The application may make it possible to discard the precontrast scan in some instances.

Fig.1 Fig.2 Fig.3

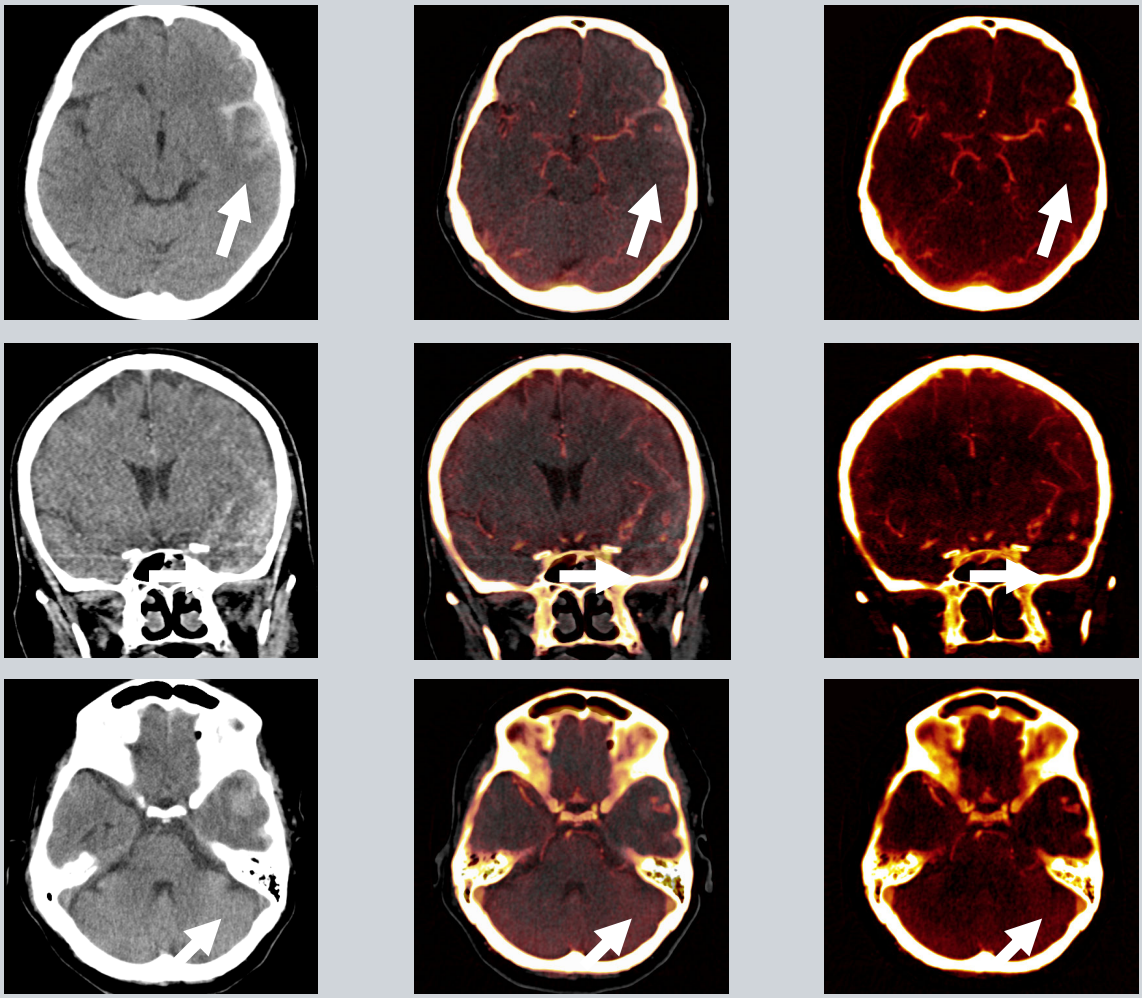

Fig1: Virtual non-contrast image (axial, coronal, axial)

Fig2: Dual Energy mixed image

Fig3: Pure iodine contrasted image

EXAMINATION PROTOCOL

Scanner	*SOMATOM Definition*
Scan area	*Head*
Scan length	*339mm*
Scan time	*9s*
Scan direction	*Caudo - Cranial*
kV	*140/80*
Effective mAs	*59/250*
Rotation time	*0,33s*
Slice collimation	*0.6mm*
Reconstructed slice thickness	*0,6mm*
Increment	*0,4mm*
Kernel	*B30f*

The drugs and doses mentioned herein are consistent with the approval labeling for uses and/or indications of the drug. The treating physician bears the sole responsibility for the diagnosis and treatment of patients, including drugs and doses prescribed in connection with such use. The Operating Instructions must always be strictly followed when operating the CT System. The source for the technical data is the corresponding data sheets. Results may vary.