

# Dual Source CT Visualization of thrombosed Aortocoronary Venous Bypass graft

## SOMATOM Definition

Author: Christoph Becker, MD, Department of Radiology, University Hospital of Munich-Großhadern, Germany

## HISTORY

A 64 year-old male patient with chest pain with known coronary artery disease (CAD) and after bypass surgery was referred for a Dual Source CT. A scan from the aortic arch to the apex was performed with 140ml of Ultravist 370 followed by a saline chaser bolus of 100ml.

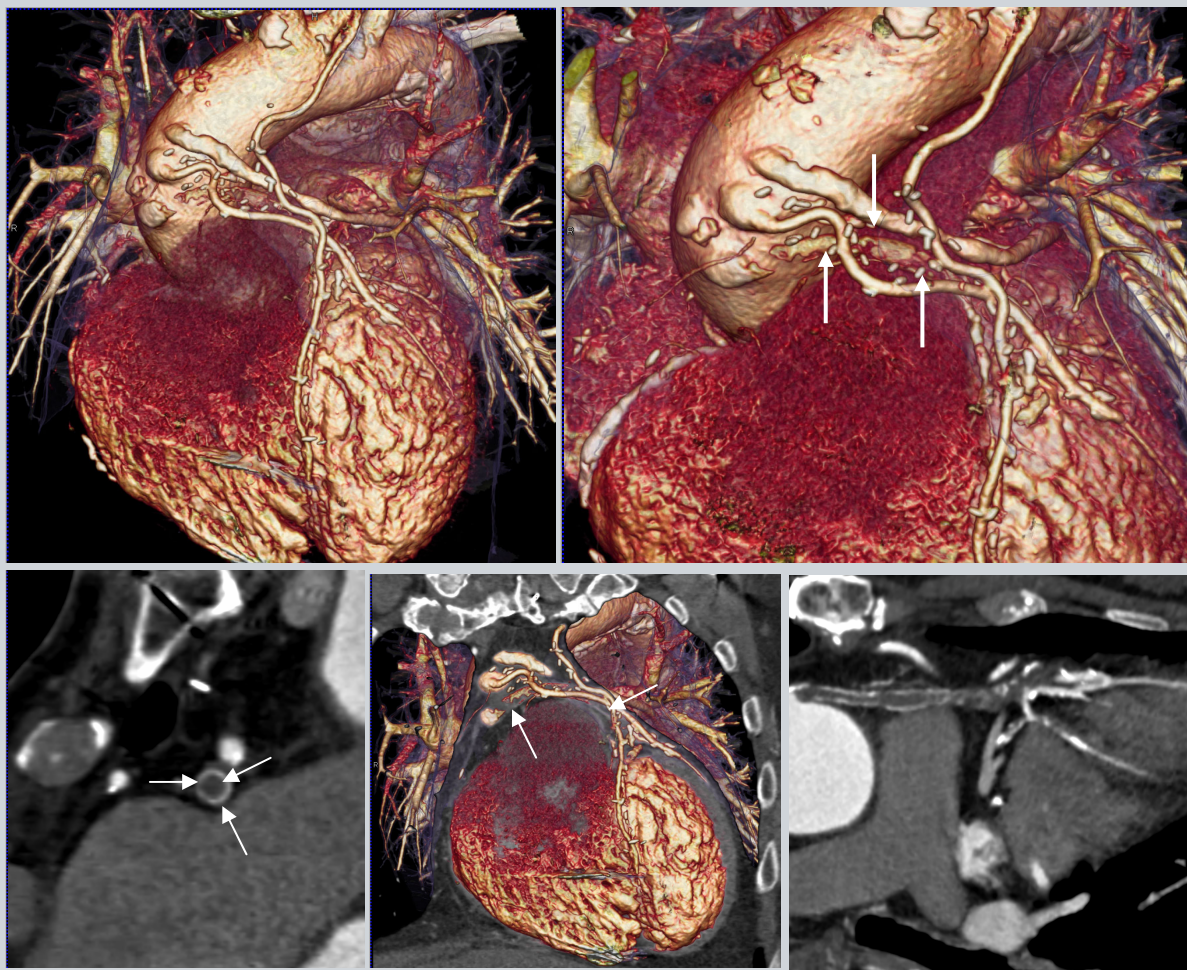
## DIAGNOSIS

Visualization of 5 bypass grafts. Three of them are patent (left internal mammary artery-bypass leading to left anterior descending artery, Radial artery to the first diagonal branch, one aortocoronary venous bypass leading to the Circumflex artery). The fourth aortocoronary venous bypass is leading to the left anterior descending recently occluded by a large thrombus. From a CT morphological aspect (density inside the thrombus 67 HU) the occlusion is not older than 3 months.

The last venous bypass graft is leading to the right coronary artery and already occluded since a longer time (already organized and not anymore visible).

## COMMENTS

With the high temporal resolution of 82ms the bypasses and the anastomosis are sharply displayed. With the visualization of VRT display in one view the status of the bypass grafts is detected. The CT images give also morphological information of the vessel lumen and give hints about the time point of occlusion which has impact on therapy.



Visualization of 5 bypass grafts. Three with normal flow and one with a large thrombus in the aortocoronary venous bypass going to the LAD and the fifth is chronically occluded.

## EXAMINATION PROTOCOL

<b>Scanner</b>	<b>SOMATOM Definition</b>
<b>Scan area</b>	<b>Heart</b>
<b>Scan length</b>	<b>190 mm</b>
<b>Scan time</b>	<b>17 s</b>
<b>Scan direction</b>	<b>Caudo-cranial</b>
<b>kV</b>	<b>120 kV</b>
<b>Effective mAs</b>	<b>265 mAs/rot</b>
<b>Rotation time</b>	<b>0.33 s</b>
<b>Slice collimation</b>	<b>0.6 mm</b>
<b>Reconstructed slice thickness</b>	<b>0.75 mm</b>
<b>Increment</b>	<b>0.5 mm</b>
<b>CTDIvol</b>	<b>25.33 mGy</b>
<b>Kernel</b>	<b>B26f</b>

The information presented in this case study is for illustration only and is not intended to be relied upon by the reader for instruction as to the practice of medicine. Any health care practitioner reading this information is reminded that they must use their own learning, training and expertise in dealing with their individual patients. This material does not substitute for that duty and is not intended by Siemens Medical Systems to be used for any purpose in that regard.

The drugs and doses mentioned herein are consistent with the approval labelling 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.