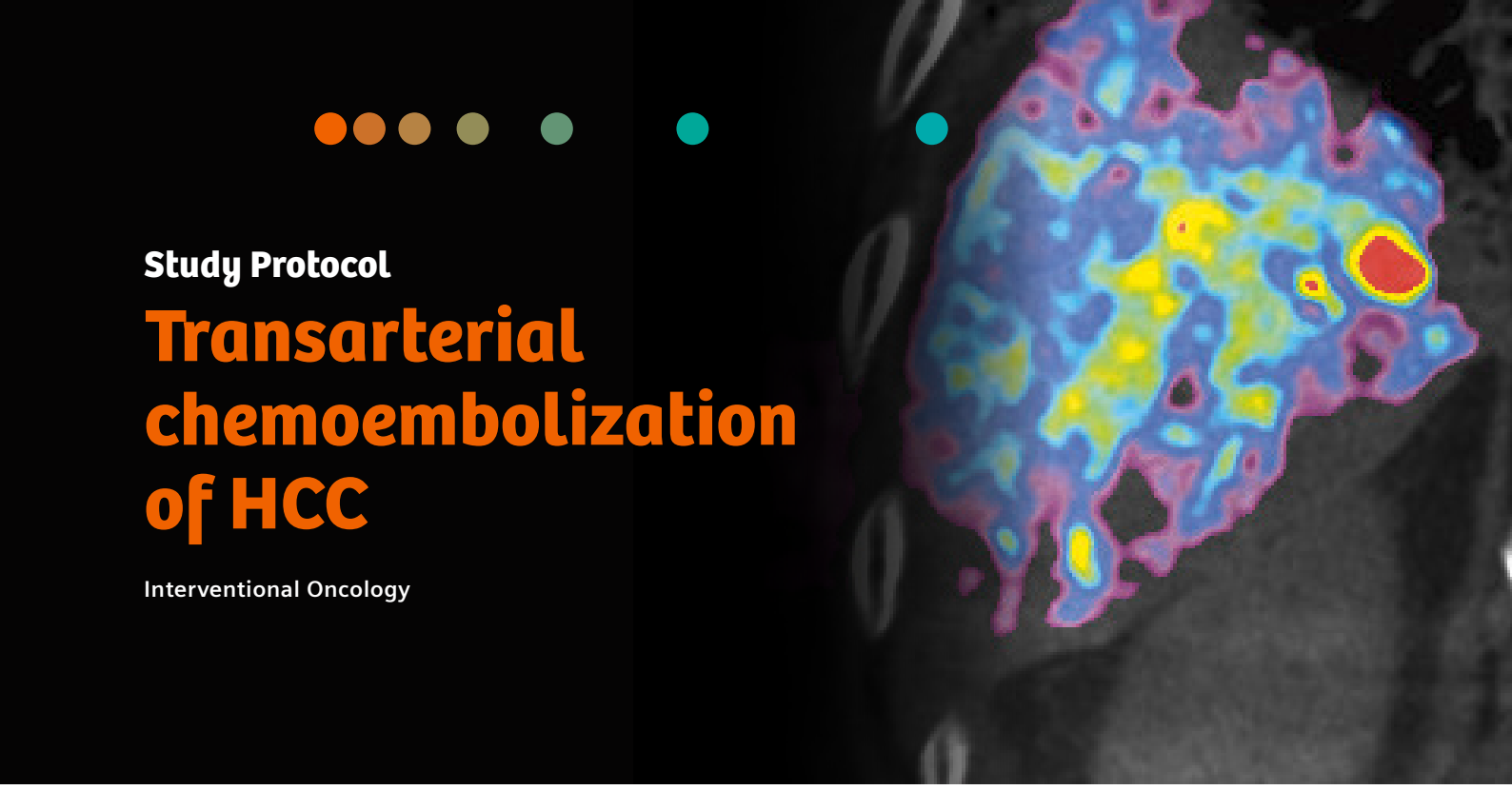


Study Protocol

Transarterial chemoembolization of HCC

Interventional Oncology

Consecutive *syngo* DynaPBV Body and late-phase *syngo* DynaCT scans for HCC based on just one contrast injection.

Courtesy of
Masao Hamuro, MD,
Yoshinori Takao, Takao Ichida,
Osaka City University Hospital,
Osaka, Japan

Supported by
syngo DynaCT
syngo DynaPBV Body

System & Software
Artis zee biplane VC21,
syngo X Workplace VB21
(collaboration project for
syngo DynaPBV Body)

Case Description

Patient history
A 77-year-old male, HCV-positive cirrhosis, hepatocellular carcinoma (HCC).

Diagnosis
Multiple hepatocellular carcinoma diagnosed two years previously, treated with TACE.

Treatment
A microcatheter was selectively inserted into the feeding arteries through the right and left hepatic arteries. Lipiodolemulsion and gelatine sponge particles were then injected for TACE treatment.

General comments
We usually performed dual phase DynaCT hepatic arteriography (CTHA) just before embolization in TACE procedures for HCC patients as standard at our institute. The PBVimaging was performed independently as an optional acquisition after the CTHA.

We used a manual procedure to acquire both the PBV and CTHA images in a series of acquisitions using a single shot of contrast medium (modified PBV/DynaCT).

Using this protocol, we can save both X-ray dose and contrast medium while maintaining appropriate image quality for both the PBV and CTHA.

Tips and tricks
The 6 second *syngo* DynaCT run after the *syngo* DynaPBV helps visualize the characteristics of each tumor. By extending the CM injection period to 16 seconds, we achieve improved corona enhancement in the second phase of the *syngo* DynaCT with enough time to manually change the acquisition protocol of the Artis system.

SIEMENS Healthineers

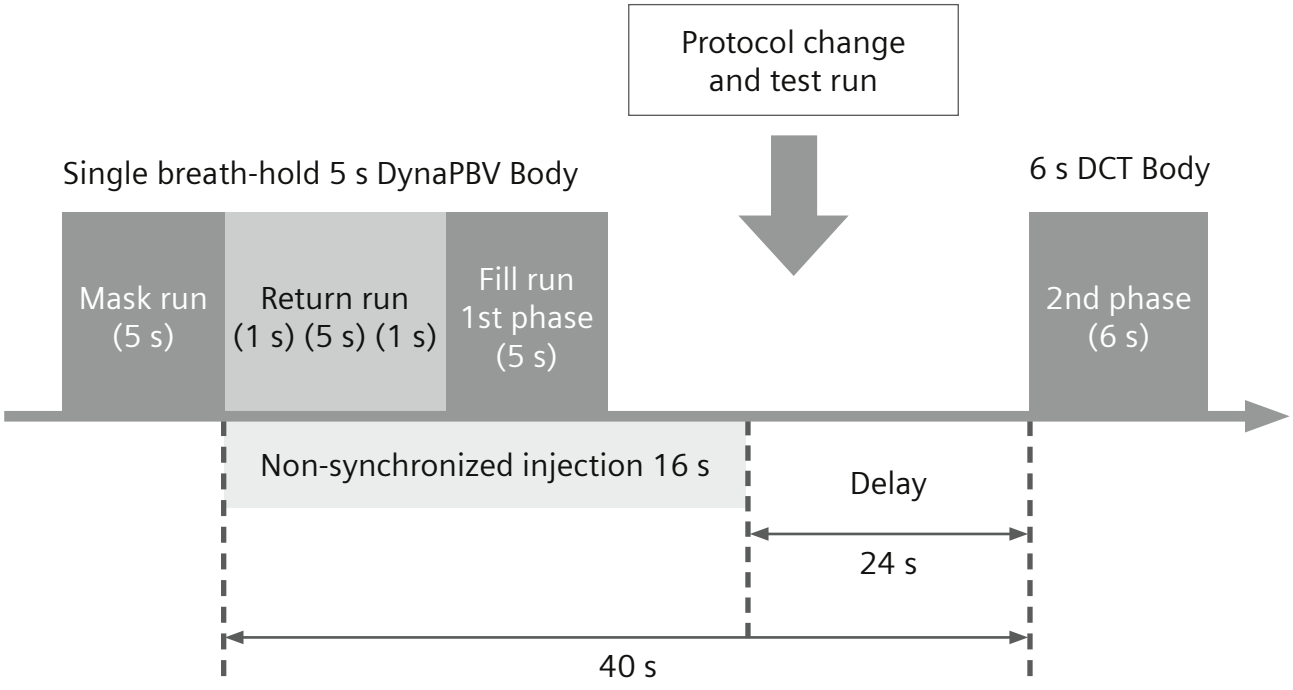
Transarterial chemoembolization of HCC

Acquisition protocol	5s DynaPBV Body/6s DCT Body

Injection protocol	
Catheter position	Right hepatic artery
Contrast medium (CM)	300 mg iodine/mL
Dilution (CM/Saline):	50 %
Injection volume	32 mL
Injection rate	2 mL/s
Duration of injection	16 s
X-ray delay	7 s for DynaPBV Body run; 24 s after CM injection was completed for DynaCT Body run
Power injector used	Yes

Reconstructions	Primary	Secondary	Tertiary
		Fill run of PBV Body	6s DCT Body run 2nd phase
Name	DynaPBV Body	DynaCT Body	DynaCT Body
VOI size	Full	Full	Full
Slice matrix	512 × 512	512 × 512	512 × 512
Kernel type	HU	HU	HU
Image characteristics	Smooth	Normal	Normal
Reconstruction mode	Dual (Sub and Mask)	NatFill	NatFill
Viewing preset	PBV body	DynaCT Body	DynaCT Body

Image/Scene 1 – Acquisition



Clinical Images

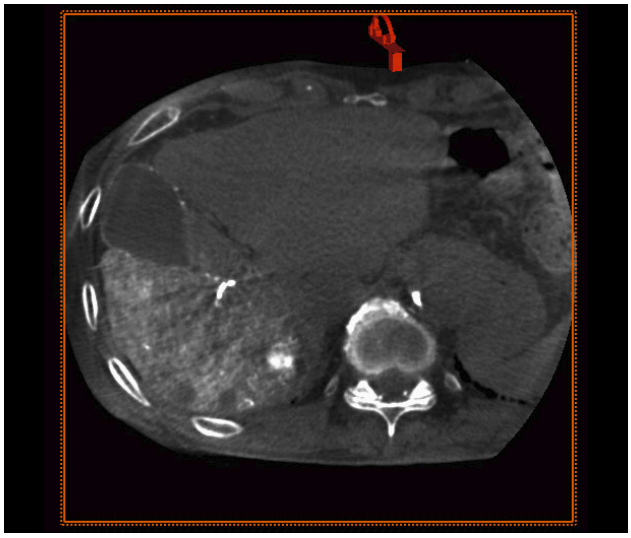


Figure 1: *syngo* DynaCT reconstruction of the fill run (5s DynaPBV Body run). Tumor stain was observed in an early phase at the posterior segment of the right lobe of the liver

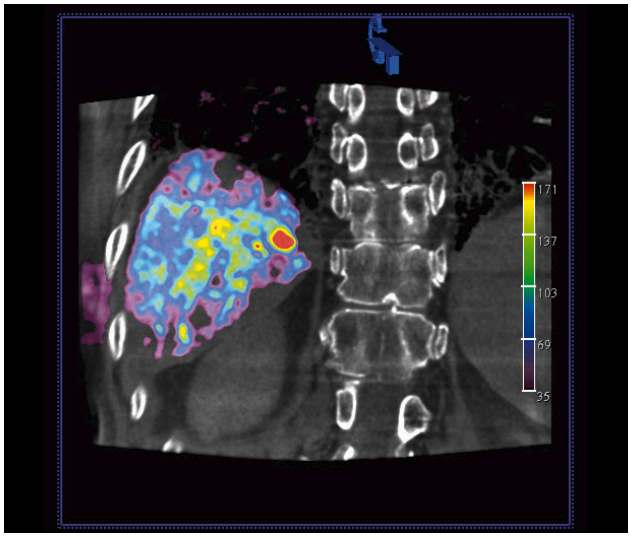


Figure 2: The PBV value of the HCC is relatively high. TACE treatment is expected to be beneficial. A small tumor was clearly visualized in the S6 segment. The PBV images support detection of such small lesions

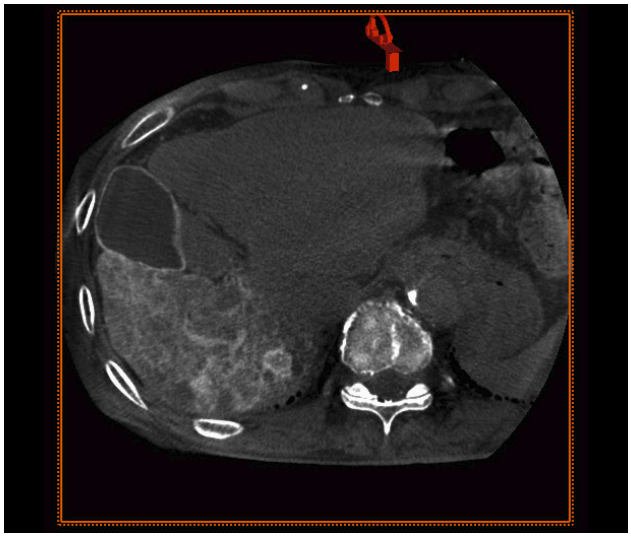


Figure 3: *syngo* DynaCT from 2nd phase: The hepatic vascularity is clearly visualized

Siemens Healthineers Headquarters
Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen, Germany
Phone: +49 9131 84-0
siemens-healthineers.com

The statements by Siemens' customers presented here are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products included in this case are available throughout the Siemens sales organization worldwide.

All rights reserved.

Published by Siemens Healthcare GmbH · AT 4672-23 0720 digital · ©Siemens Healthcare GmbH, 2020