

## Study Protocol

# Dual-phase *syngo* DynaCT in liver TACE procedures

Oncology



## Case Description

### Patient history

64-year-old male patient, HCV positive, with known cavernous transformation of the portal vein.

### Diagnosis

Typical hypervascular HCC with portal vein cavernomatosis and right portal vein macrovascular invasion.

### Treatment

Degradable starch microsphere TACE (DSM-TACE) with epirubicin consisting of two sessions of drug administration for each affected lobe.

### General comments

In the multistep DSM-TACE protocol (two sessions for each involved liver lobe), a dual-phase CBCT is performed before every session, enabling assessment of the lesion's attenuation.

### Tips & Tricks:

The breath-hold instruction is crucial. A contrast dilution 1:3 is necessary to avoid streak artifacts.

The injection should be started before the acquisition in order to maximize liver parenchyma enhancement and must be continued throughout the entire acquisition time.

Only one contrast injection is needed, which is fewer than other 3D protocols. The entire dual-phase imaging process therefore does not increase the amount of contrast media injected.

Single injection dual-phase cone beam computed tomography (DP-CBCT) intraprocedural findings correlate with 1 month mRECIST results in the course of degradable starch microsphere TACE (DSM-TACE) for hypervascular HCC and metastatic colorectal cancer (mCRC). [Scientific poster publication CIRSE 2017]

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### Courtesy of

Pierleone Lucatelli MD, PhD, EBIR  
Azienda Ospedaliera  
Universitaria Policlinico  
Umberto I, Rome

### Supported by

Dual-phase *syngo* DynaCT

### System & Software

Artis zee ceiling VC21  
*syngo* X workplace VB21

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## Dual-phase *syngo* DynaCT in liver TACE procedures

Acquisition protocol	8s DSA DCT (manual)
<b>Injection protocol</b>	
Catheter position	Proper hepatic artery
Contrast medium	350 mg iodine/mL
Dilution	33%
Injection volume	60 mL
Injection rate	4 mL/s
Duration of injection	15 s
X-ray delay	8 s for arterial run 35 s for delayed run
Power injector used	Yes
<b>Reconstructions</b>	
For both mask and fill run	
Name	DynaCT Body Nat Fill HU Normal
VOI size	Full
Slice matrix	512x512
Kernel type	HU
Image characteristics	Normal
Reconstruction mode	Nat Fill
Viewing preset	DynaCT Body

## Clinical Images

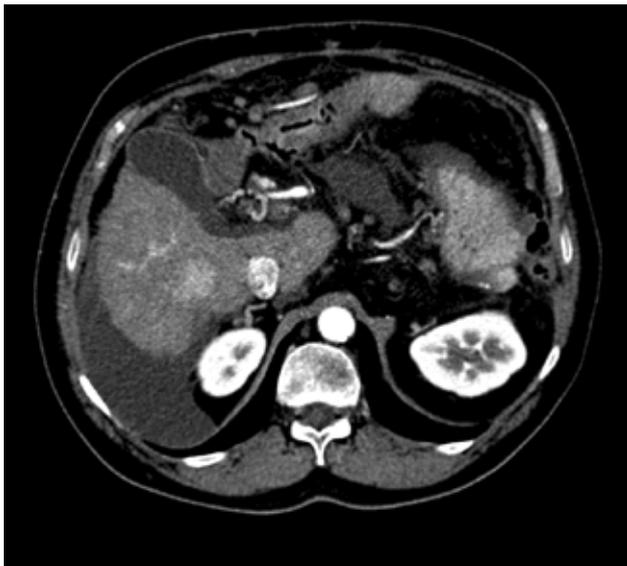


Fig. 1a Preprocedural CT – Typical hypervascular HCC (segment 6) with washin in arterial phase

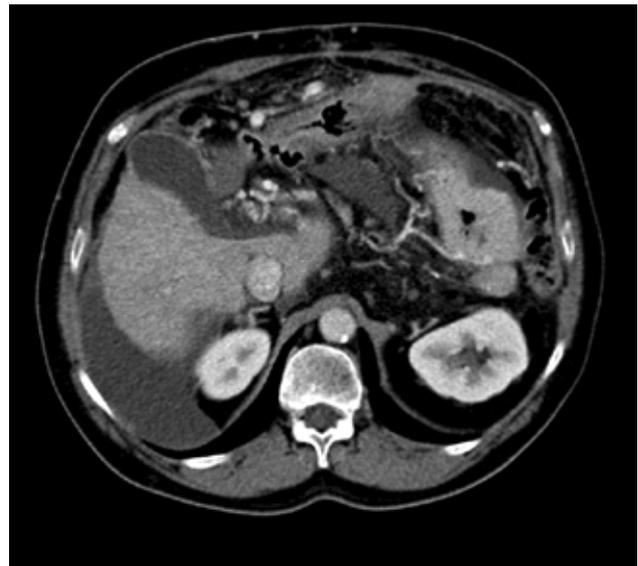


Fig. 1b Preprocedural CT – Typical hypervascular HCC (segment 6) with washout in venous phase

## Dual-phase *syngo* DynaCT in liver TACE procedures

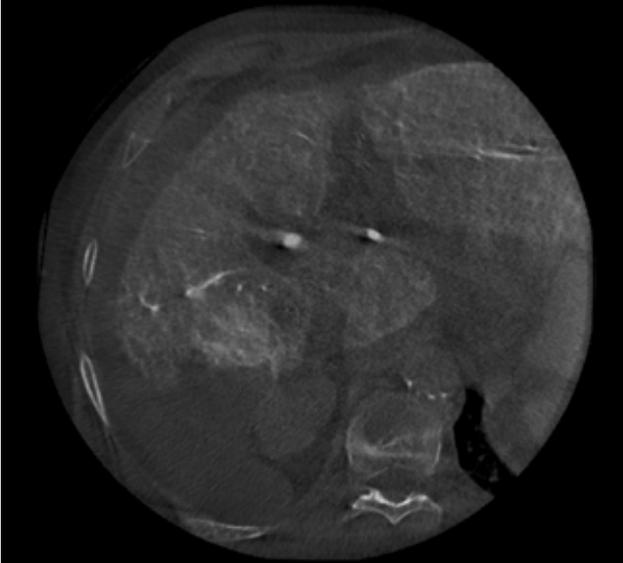


Fig. 2a Dual-phase cone beam CT confirmed the lesion – Arterial phase 3 mm MPR

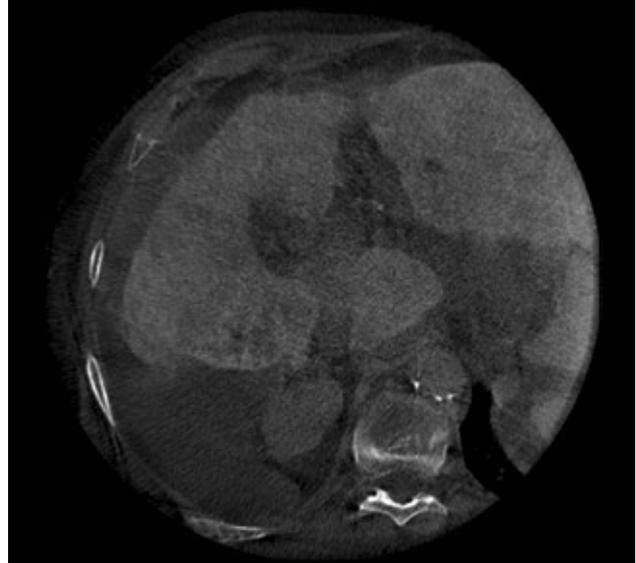


Fig. 2b Dual-phase cone beam CT confirmed the lesion – Delayed phase 3 mm MPR

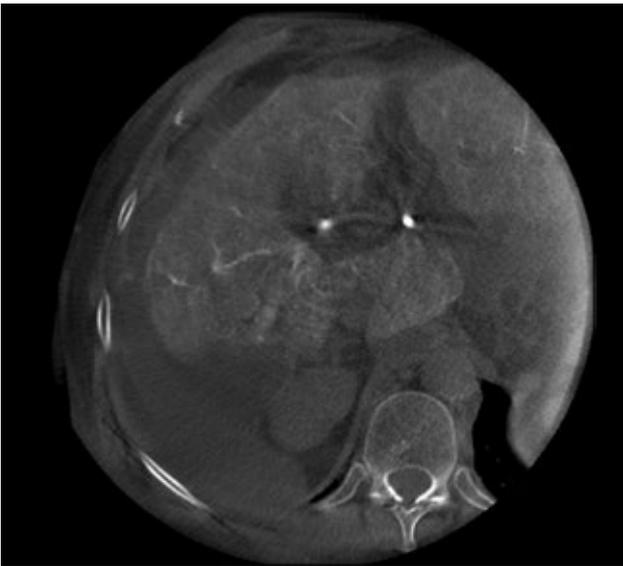


Fig. 3a Dual-phase CBCT of second session demonstrated devascularization of the nodule by means of a reduction in the attenuation values – Arterial phase 3 mm MPR

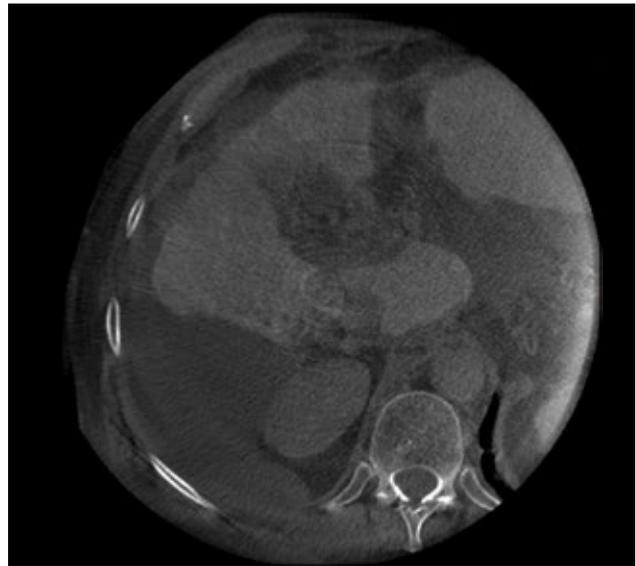


Fig. 3b Dual-phase CBCT of second session demonstrated devascularization of the nodule by means of a reduction in the attenuation values – Delayed phase 3 mm MP

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### Siemens Healthineers Headquarters

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

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