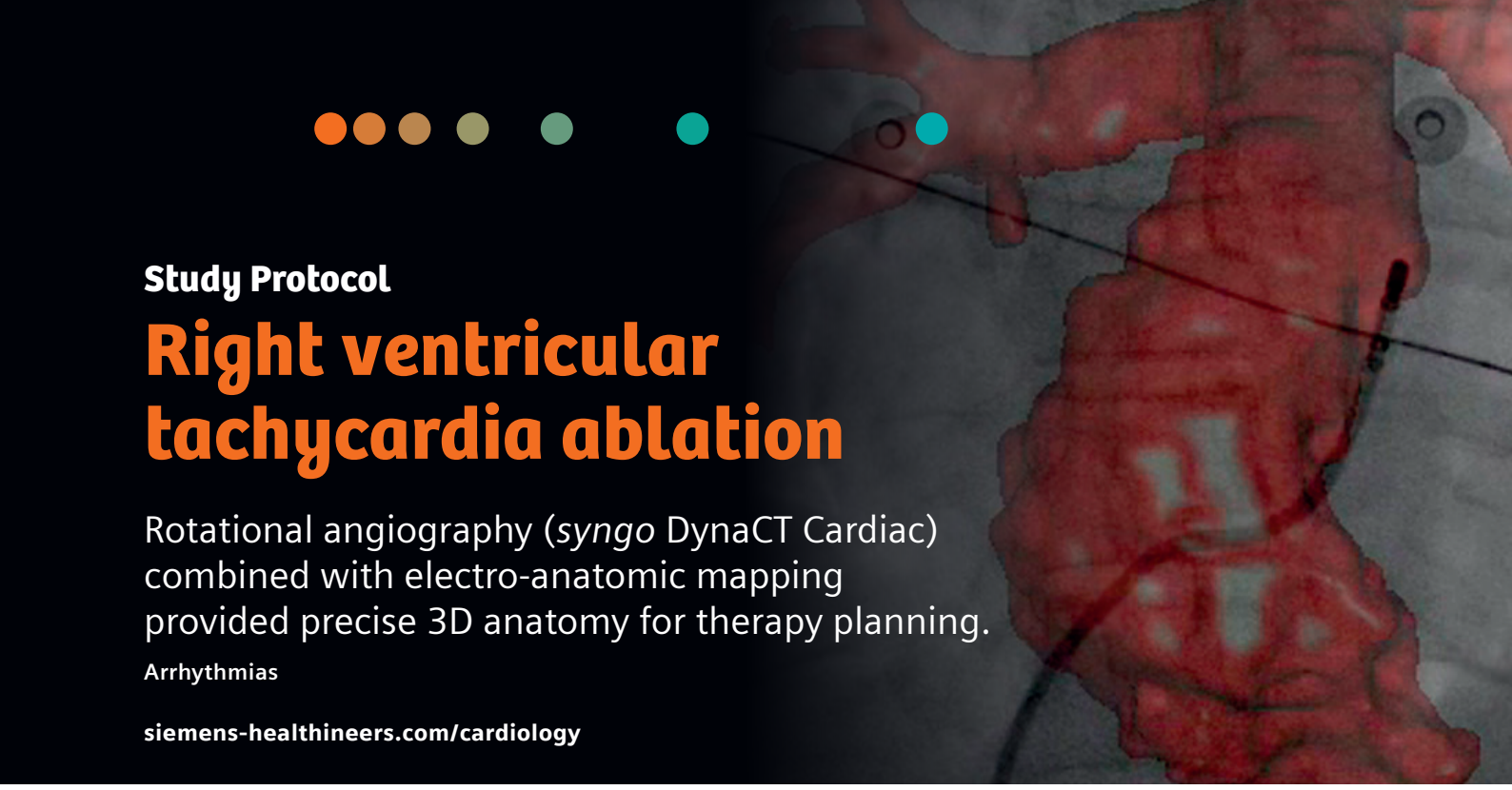


Study Protocol

Right ventricular tachycardia ablation

Rotational angiography (*syngo* DynaCT Cardiac) combined with electro-anatomic mapping provided precise 3D anatomy for therapy planning.

Arrhythmias

siemens-healthineers.com/cardiology

Case Description

Patient history
32-year-old female with recurrent episodes of VT with RVOT morphology. Symptomatic during these episodes and twice required cardioversion. EF 45 % with no obvious morphological abnormality in the RV body or outflow tract. Former ablation of her arrhythmia at another institution without lasting success. Recommended again for VT ablation due to recurrent symptomatic episodes.

Diagnosis
Recurrent right ventricular outflow tract tachycardia

Treatment
Right ventricular tachycardia ablation. Adapted workflow combining *syngo* DynaCT for ablation of right ventricular tachycardia and fusion of reconstructed data with EnSite™ NavX™ electro-anatomic mapping.

Tips & Tricks
- DynaCT anatomy provides additional RF pulses to an area in RVOT characterized by a microaneurysm, which was visible only in the DynaCT. Without DynaCT, this decision would not have been possible.
- Injecting contrast into the RVOT will itself cause some arrhythmia equivalent to tachycardia pacing, so there is no need for tachycardia induction during injection.

General comments
Rotational angiography (*syngo* DynaCT Cardiac) combined with electro-anatomic mapping provided precise 3D anatomy imaging for therapy planning. 3D CT/MRI images were fused with electro-anatomic mapping data to provide a more precise anatomical and volume data for 3D mapping and therapy. Activation mapping was acquired and the site of VT initiation was identified in the RVOT. Catheter navigation and ablation was performed using *syngo* DynaCT Cardiac 3D volume overlay on live fluoroscopy.

Courtesy of
Mohan Nair, MD, and his team,
Department of Cardiology,
Holy Family Hospital,
New Delhi, India

Supported by
Rotational Angiography and
EnSite™ NavX™ Fusion
syngo DynaCT Cardiac

System
Artis zee floor with VC21

SIEMENS Healthineers

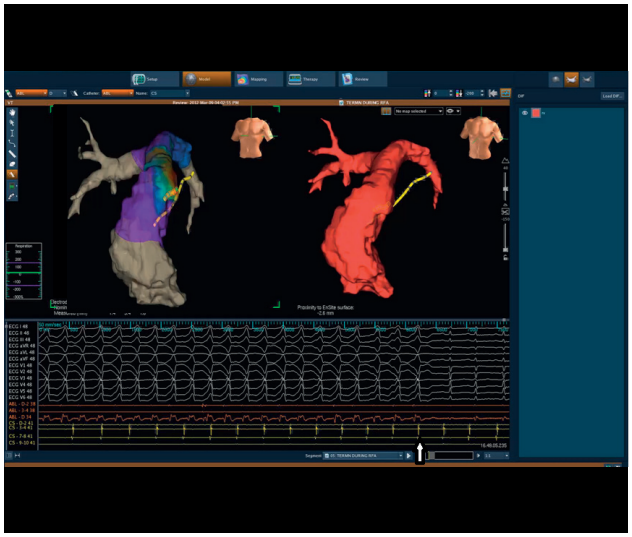
Right ventricular tachycardia ablation

Acquisition protocol	5s Card Untriggered
Number of projections	248
System dose	360 nGy/fr
Increment in degrees	0.8°/f

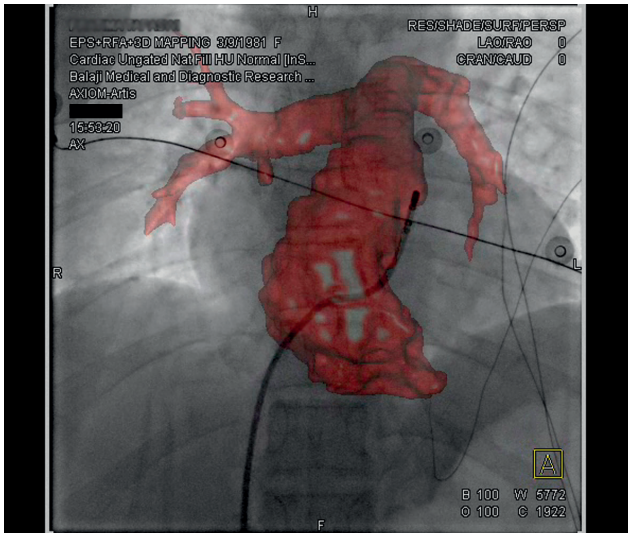
Injection protocol	
Catheter position	Right ventricle apex
Contrast medium (CM)	370 mg iodine/mL
Test bolus	w/o
Dilution	No
Injection volume	83 mL
Injection rate	15 mL/s
Duration of injection	5.5 s
X-ray delay	0.5 s
Power injector used	Yes

Reconstructions	Primary
VOI size	Full
Slice matrix	256 × 256
Kernel type	HU
Image characteristics	Normal
Reconstruction mode	Nat fill
Viewing preset	Golden

Clinical Images



EnSite™ NavX™ activation map (left-hand image) after fusion of anatomy with the *syngo* DynaCT Cardiac right ventricular angiogram (right-hand image). Successful ablation was easily achieved using this fusion mapping



syngo DynaCT Cardiac 3D anatomy superimposed on live fluoroscopy. Successful ablation was achieved using *syngo* DynaCT Cardiac data as guidance when EnSite™ NavX™ anatomical visualization was no longer available

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

The statements by Siemens Healthineers 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.

Published by Siemens Healthcare GmbH · AT 9582-12 0820 digital · ©Siemens Healthcare GmbH, 2020