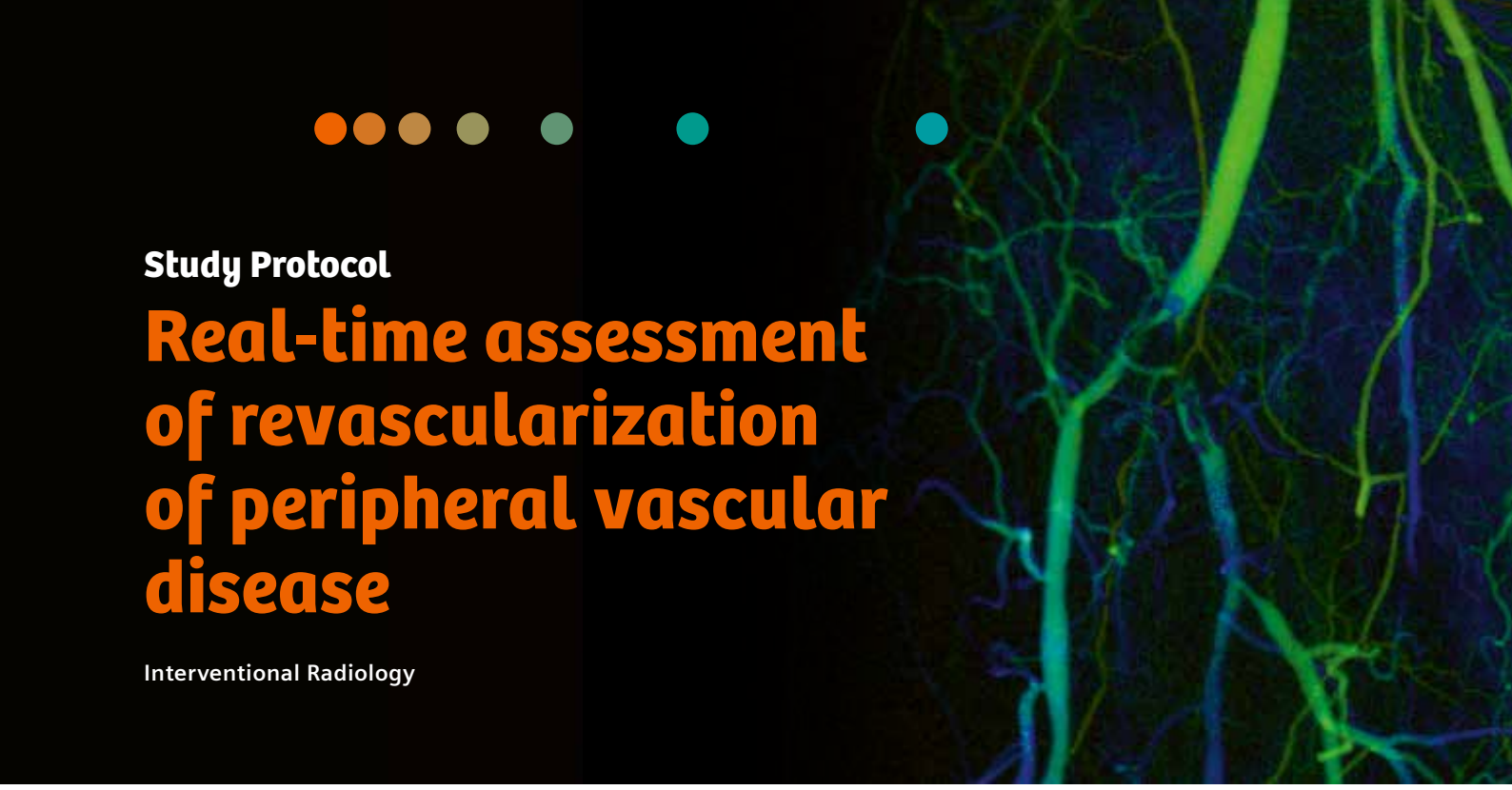

Study Protocol

Real-time assessment of revascularization of peripheral vascular disease

Interventional Radiology

The functional information gathered by *syngo* iFlow was very valuable for choosing the right treatment strategy for the next step.

Courtesy of
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Supported by
syngo iFlow

System & Software
Artis zee VC14
syngo X Workplace VB21

Case Description

Patient history
A 75-year-old male patient with 8-year history of hypertension suffered from low extremity arterial occlusive disease. Implantation of a stent 3 years prior, presenting with severe pain and numbness in his right lower limb.

Diagnosis
The middle and upper segments of the right superficial femoral artery were occluded, while the lower segment still showed sufficient perfusion due to collateral flow. The popliteal, peroneal, anterior tibial, and posterior tibial arteries were not obstructed but presented with localized plaque formations. A severe stenosis existed at the bifurcation of the posterior tibial artery.

Treatment
A balloon dilatation and subsequent thrombolysis therapy were performed at the upper segment of the right superficial femoral artery. 2 stents (6x150 mm, Protege, EV3) were implanted into the right superficial femoral artery to reopen the vessel.

General comments
This case demonstrated the capabilities of *syngo* iFlow to evaluate the perfusion and circulation in and around distal arteries during the interventional procedure. The functional information was very valuable for choosing the right treatment strategy for the next step.

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Real-time assessment of revascularization of peripheral vascular disease

Acquisition protocol	DSA 2 f/s
Injection protocol	
Catheter position	Not specified
Contrast medium (CM)	320 mg iodine/mL
Dilution (CM/Saline):	No
Injection volume	8 mL
Injection rate	3 mL/s
Duration of injection	2.6 s
X-ray delay	No
Power injector used	Yes

Clinical Images

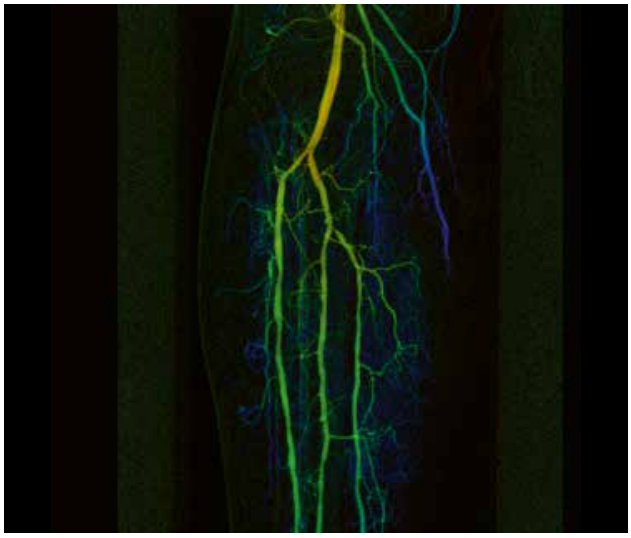

Figure 1: *syngo* iFlow image before treatment of the stenosed superficial femoral artery

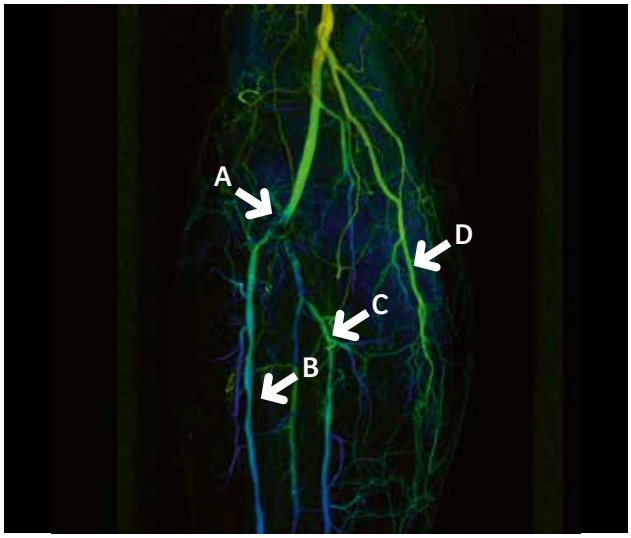

Figure 2: During stenting of the superficial femoral artery an occlusion of the popliteal bifurcation was caused by an embolus (A)

syngo iFlow shows the hemodynamic changes in the distal vessels. Time-to-peak (TTP) analysis based on the *syngo* iFlow images showed an increased flow in a collateral branch (D) ↓ 2.5 s. At the same time blood flow within the anterior (B) ↑ 2.5 s and posterior tibial arteries (C) ↑ 1.5 s slowed down

Clinical Images

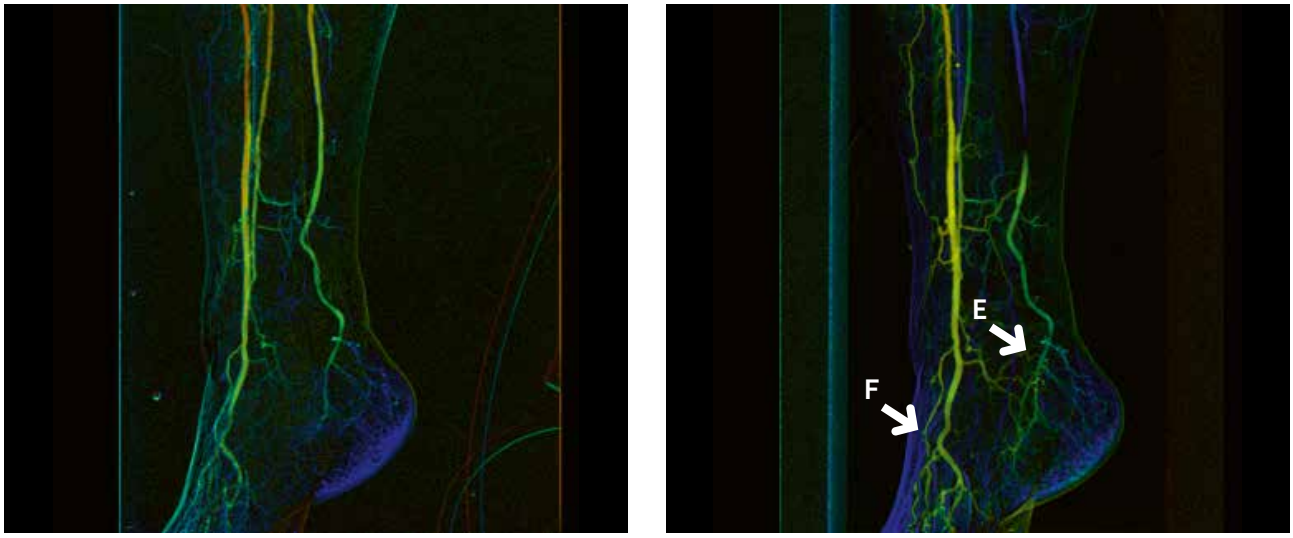

Figure 3: TTP shows that (E) the blood flow in the malleolar artery was almost the same as before (TTP ↑ 0.5 s) and that (F) the blood flow in the dorsalis pedis artery was improved (TTP ↓ 3.5 s)

syngo iFlow measurement shows improved distal blood flow after intervention despite the embolus

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