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CARDIOVASCULAR FLASHLIGHT

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Allograft vasculopathy vs. coronary artery disease: comparison by optical coherence tomography**Christian Templin***, Jelena R. Ghadri, Georg Noll, Thomas F. Lüscher, and Frank Ruschitzka

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* Corresponding author: Department of Cardiology, University Hospital Zurich, Raemistrasse 100, 8091 Zurich, Switzerland. Tel: +41 44 255 95 85, Fax: +41 44 255 44 01, Email: christian.templin@usz.ch**This paper was guest edited by Prof. Brahmajee K. Nallamothu, Department of Internal Medicine, University of Michigan, MI, USA**

Optical coherence tomography (OCT) is a novel high-resolution intravascular imaging technique allowing characterization of coronary artery plaques and evaluation of stent strut coverage. As a new application, OCT can be also used in allograft vasculopathy as demonstrated by the following images.

Comparison of OCT and coronary angiography in a cardiac transplant recipient vs. a patient with coronary artery disease: OCT image of the left anterior descending coronary artery in a 72-year-old patient 14 years after heart transplantation and current immunosuppressive treatment with tacrolimus, azathioprine, and prednisone shows a well-defined signal-rich layer indicating concentric intimal hyperproliferation, which is pathognomonic for allograft vasculopathy (*Panel A*; see Supplementary material online, *Video S1*).

Optical coherence tomography image in a 70-year-old patient with coronary artery disease demonstrates a lipid-rich plaque with a large, homogeneous, poorly delineated and signal-poor region with alternating signal-rich spots reflecting single calcifications (*Panel B*). A signal-rich band mirrors a thin fibrous cap extending from 6 to 9 o'clock. Moreover, non-covered stent struts are well visualized (*Panel B*; see Supplementary material online, *Video S2*).

Sole coronary angiography does not allow assessing intraluminal tissue morphology such as allograft vasculopathy (*Panel C*) and plaque characterization (*Panel D*) which both may have important prognostic implication on patient outcome.

Supplementary material is available at *European Heart Journal* online.

