Convenient timing by “accident” – Resting ischemia detected by resting myocardial perfusion imaging

IMAGING

B. KOVACS¹, P.T. SIEGRIST², B.E. STÄHLI² and R.R. BUECHEL^{1*}

¹ Department of Nuclear Medicine, Cardiac Imaging, University Hospital Zurich, Zurich, Switzerland

² Department of Cardiology, University Heart Center, University Hospital Zurich, Zurich, Switzerland

CASE REPORT

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A 71-year old male patient with prior coronary artery bypass grafting was referred for ¹³N-ammonia positron emission tomography myocardial perfusion imaging (PET-MPI) for evaluation of stable angina (CCS II). A rest/stress protocol was performed, using adenosine. Unfortunately, quantitative analysis revealed the absence of myocardial blood flow increase with a calculated myocardial flow reserve of 1.01, suggesting a complete lack of adenosine response. A small inferobasal perfusion defect (figure, white arrowhead) was interpreted as a small scar, but no statement could be made regarding ischemia. Hence, decision was made to repeat the exam. Repeat PET-MPI performed 6 weeks later had to be interrupted after the acquisition of rest datasets but prior to initiation of pharmacological stress because of resting angina. In retrospect, the patient reported an increase of symptoms' intensity and frequency over several days before PET-MPI, corresponding to typical angina CCS III-IV. He was

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*Corresponding author.
E-mail: ronny.buechel@usz.ch

urgently transferred to the chest pain unit with suspicion of acute coronary syndrome, where the diagnosis of NSTEMI was confirmed. Meanwhile, analysis of resting images revealed the inferobasal perfusion defect increasing in size (figure, white arrow) as compared to the resting images from the initial exam six weeks earlier, indicating ischemia at rest. In line with the results from PET-MPI, coronary angiography showed a subtotal stenosis of the distal anastomosis of the graft to the obtuse marginal branch providing collaterals

(Rentrop I-II) to the chronically occluded right coronary artery (figure, asterisk). The lesion was successfully treated with a zotarolimus-eluting stent (figure, cross).

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