

Reversed redistribution in SPECT images from spontaneous coronary vasospasm

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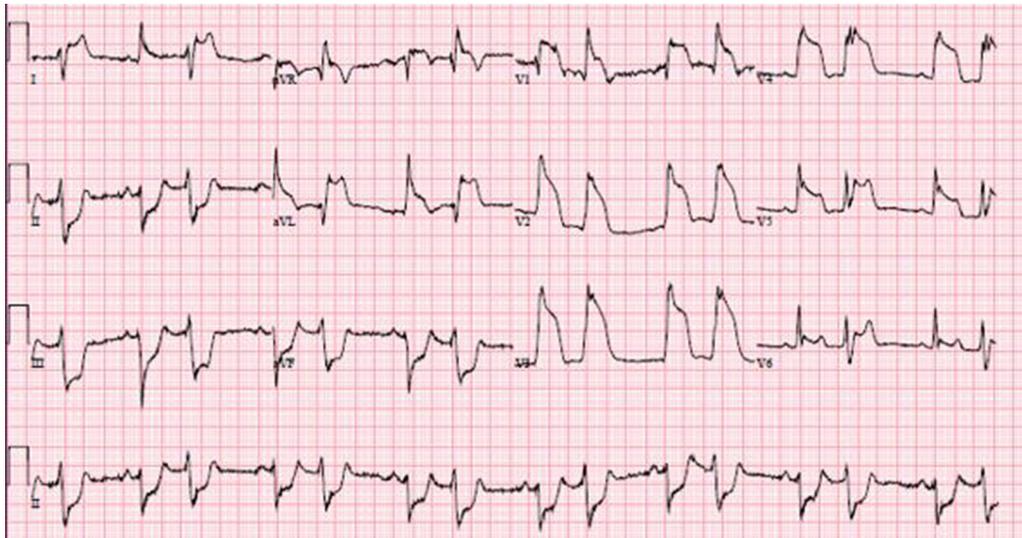
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A 53-year-old male presented after a syncopal episode after taking sublingual nitroglycerin for chest pain. His past history included a percutaneous coronary intervention of the left circumflex artery using a drug-eluting stent 3 weeks prior, as well as remote stenting of the proximal right coronary artery (RCA) and mid left

anterior descending artery (LAD) using drug-eluting stents. During the hospitalization, he experienced recurrent chest pain and an electrocardiogram displayed ST elevations in the anterior leads, that resolved with nitroglycerin as displayed below.

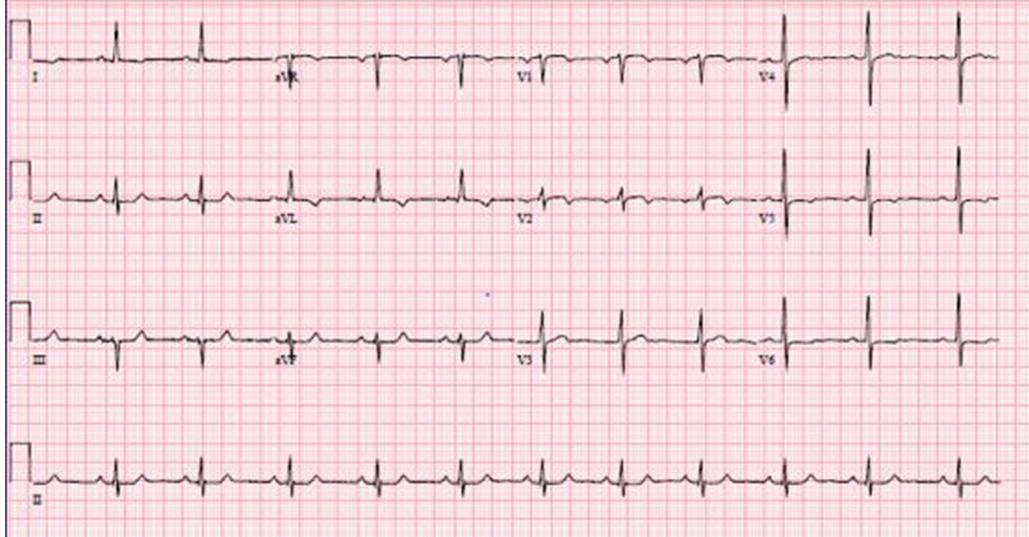


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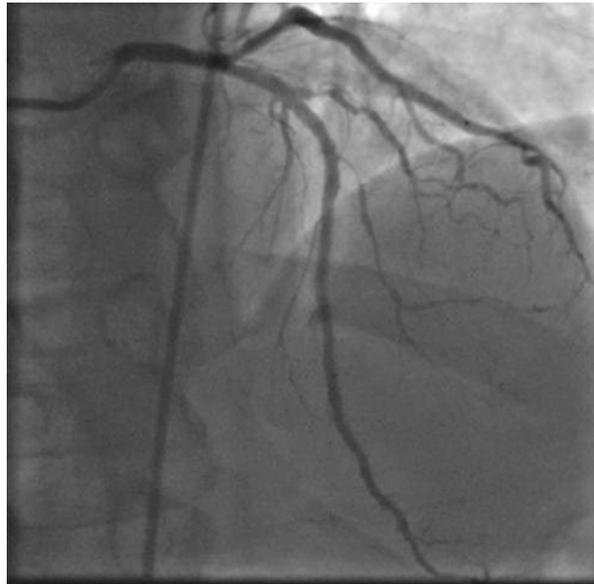
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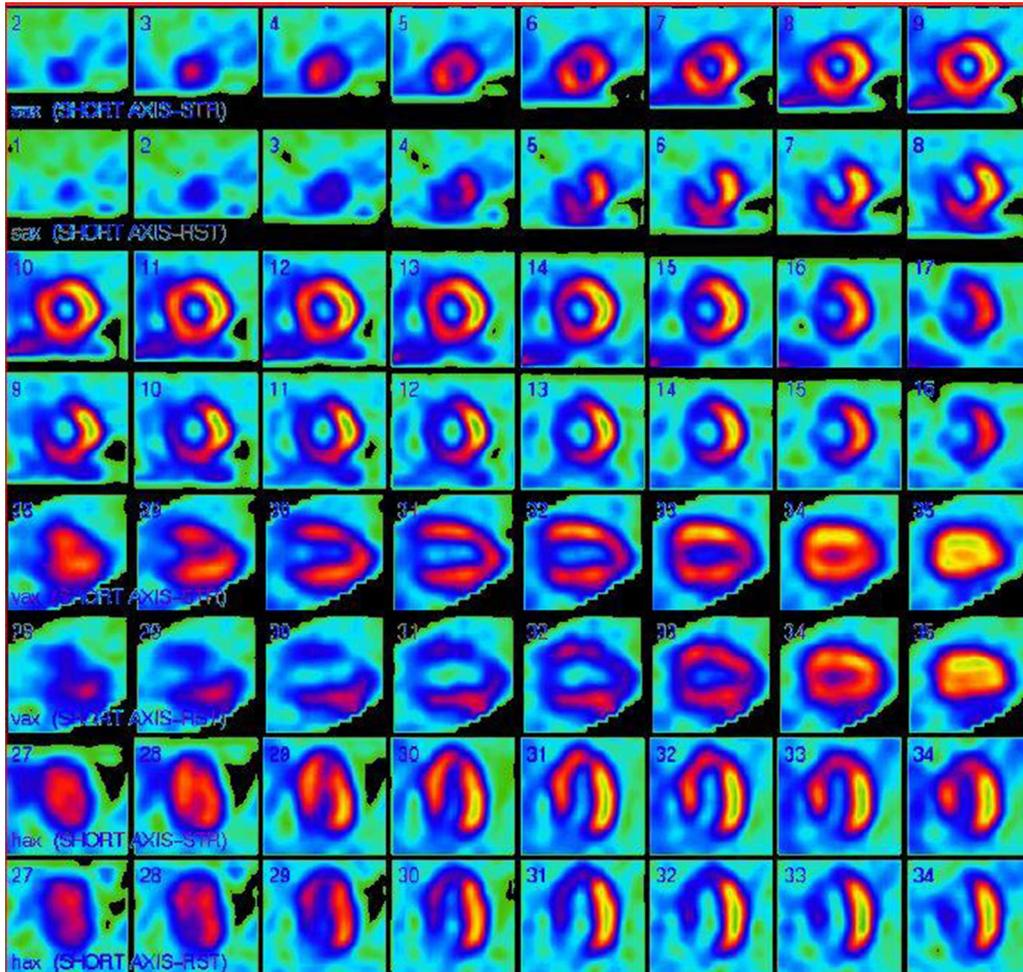


Coronary angiography revealed patent LAD stent and a RCA stenosis that was treated with a drug-eluting stent.



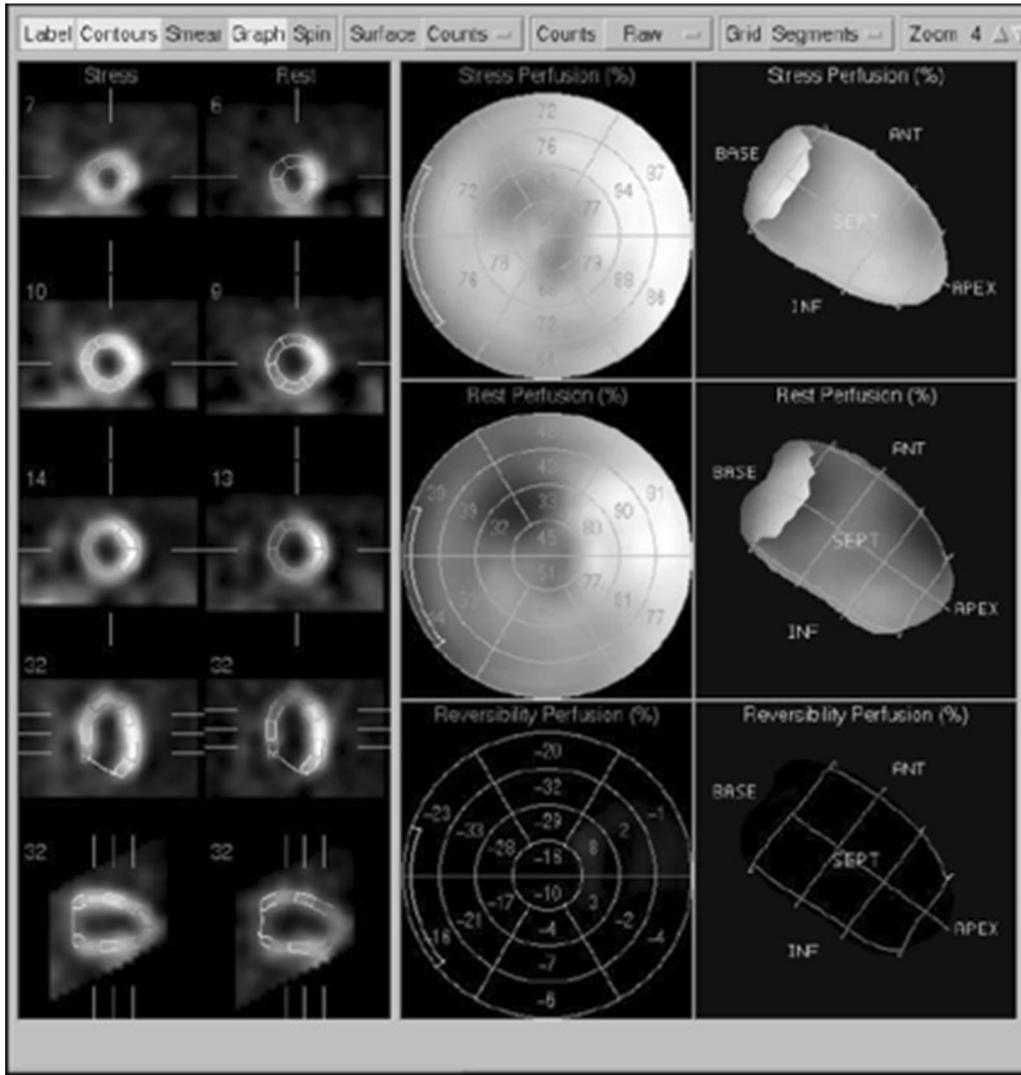
His symptoms continued and repeat coronary angiography revealed no changes. He underwent dipyridamole pharmacologic stress test using 10.5mCi Tc-99m tetrofosmin, which displayed a “reversed

redistribution” with a marked defect in the septum, mid anterior wall, the apical anterior wall, and apex at rest which appeared normal in stress images.



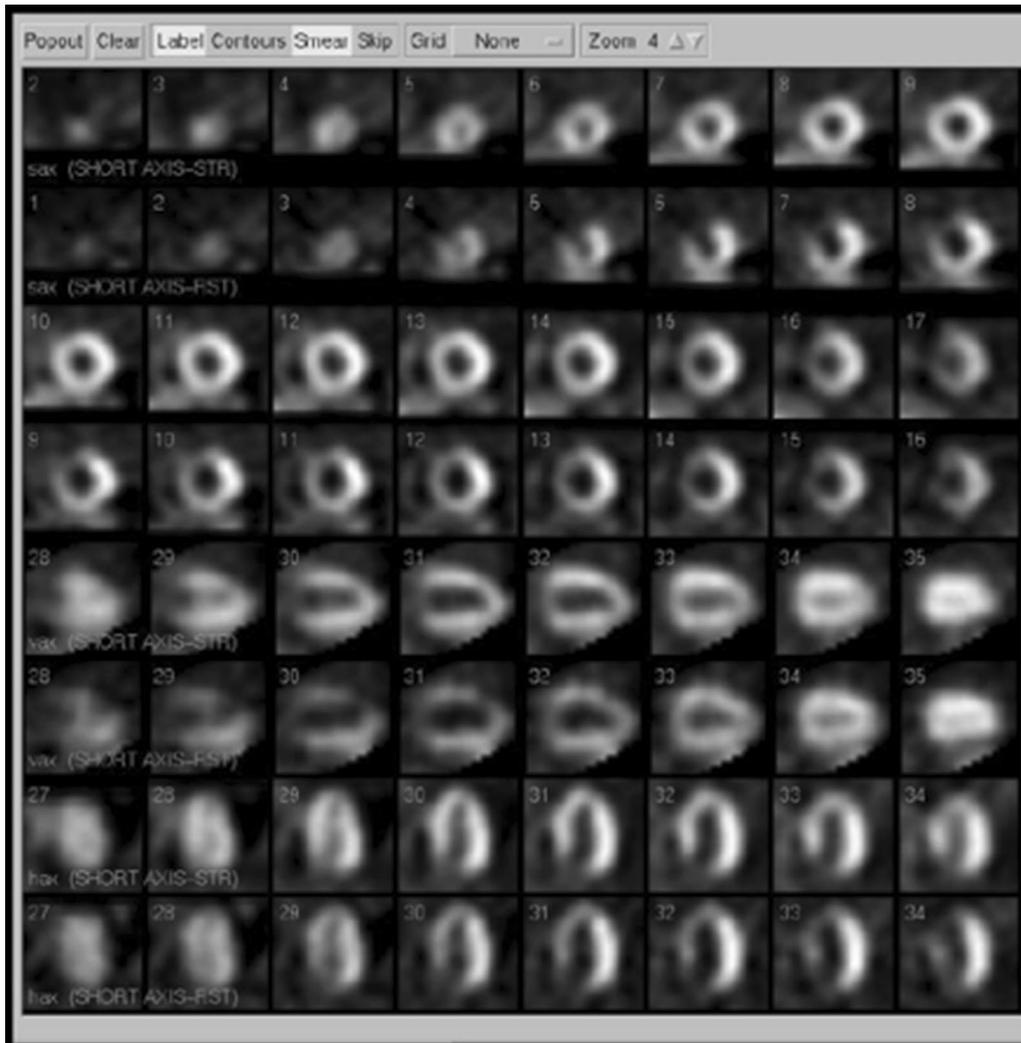
Upon inquiry, the patient reported chest pain during tracer injection and acquisition of the resting images which had resolved prior to dipyridamole administration. The pattern of “reversed redistribution” was believed to be related to spontaneous coronary vasospasm which occurred during the acquisition of the

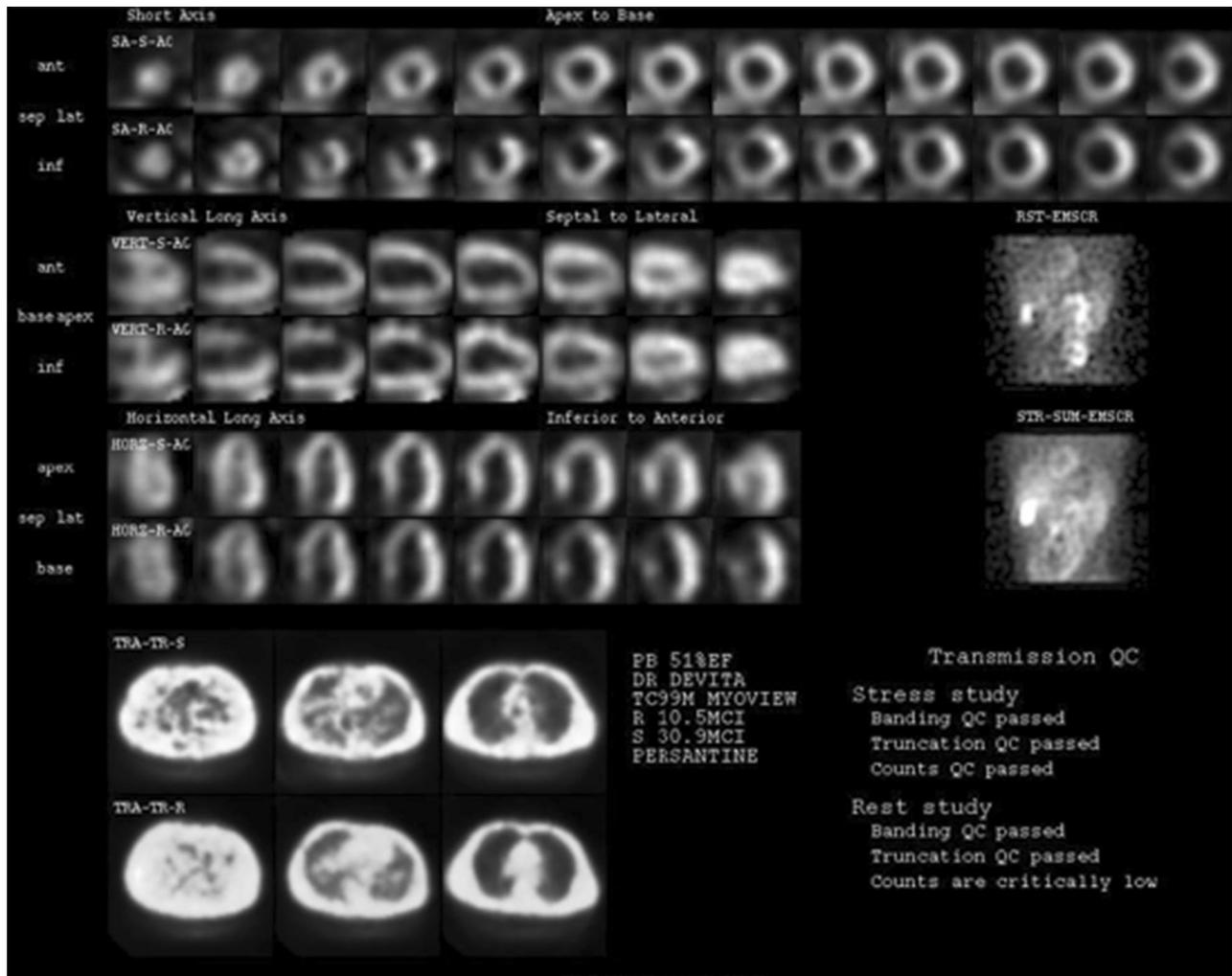
resting images and resolved prior to acquisition of the stress images. Reversible perfusion defects caused by coronary vasospasm have been previously described but has not been identified as causing “reverse redistribution” pattern on SPECT perfusion imaging.



A ‘reversed redistribution’ myocardial perfusion pattern on nuclear stress testing has previously been described in with chronic stable artery disease with collateral supply,¹ as artifact, with a higher BMI,² with salvaged myocardium,³ and severe coronary artery

disease and in myocardial infarction after thrombolytic therapy. To our knowledge, a ‘reversed redistribution’ pattern has not been previously reported following spontaneous coronary artery spasm.





References

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