



Diagnostic accuracy of coronary angiography with 64-slice MSCT in asymptomatic patients prior to non coronary vascular operations in comparison with conventional angiography - our experiences

e-Poster: 119

Congress: ESCR 2009

Type: Poster

Topic: ESCR 2009

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1. Purpose

To analyze diagnostic accuracy of 64 slice MSCT coronary angiography in evaluation and detection of obstructive lesions of coronary arteries as a reliable method for preoperative management of patients (pts) with non coronary vascular disease.

2. Methods and Materials

From March 2008 until January 2009, we performed ECG - gated, 64 slice MSCT coronary angiography in 87 asymptomatic non coronary pts (mean age 52 ± 15 yrs, 60 of them male) prior to non coronary vascular operations (peripheral arterial occlusive disease, valvular disease, disease of aorta: aneurysms, dissection Stanford A). Premedication with i.v β blockers was administered in all with heart rate >70 hbm. Patients with arrhythmia and those with severe coronary calcifications were excluded. All pts also underwent conventional angiography for confirmation of the findings.

3. Results

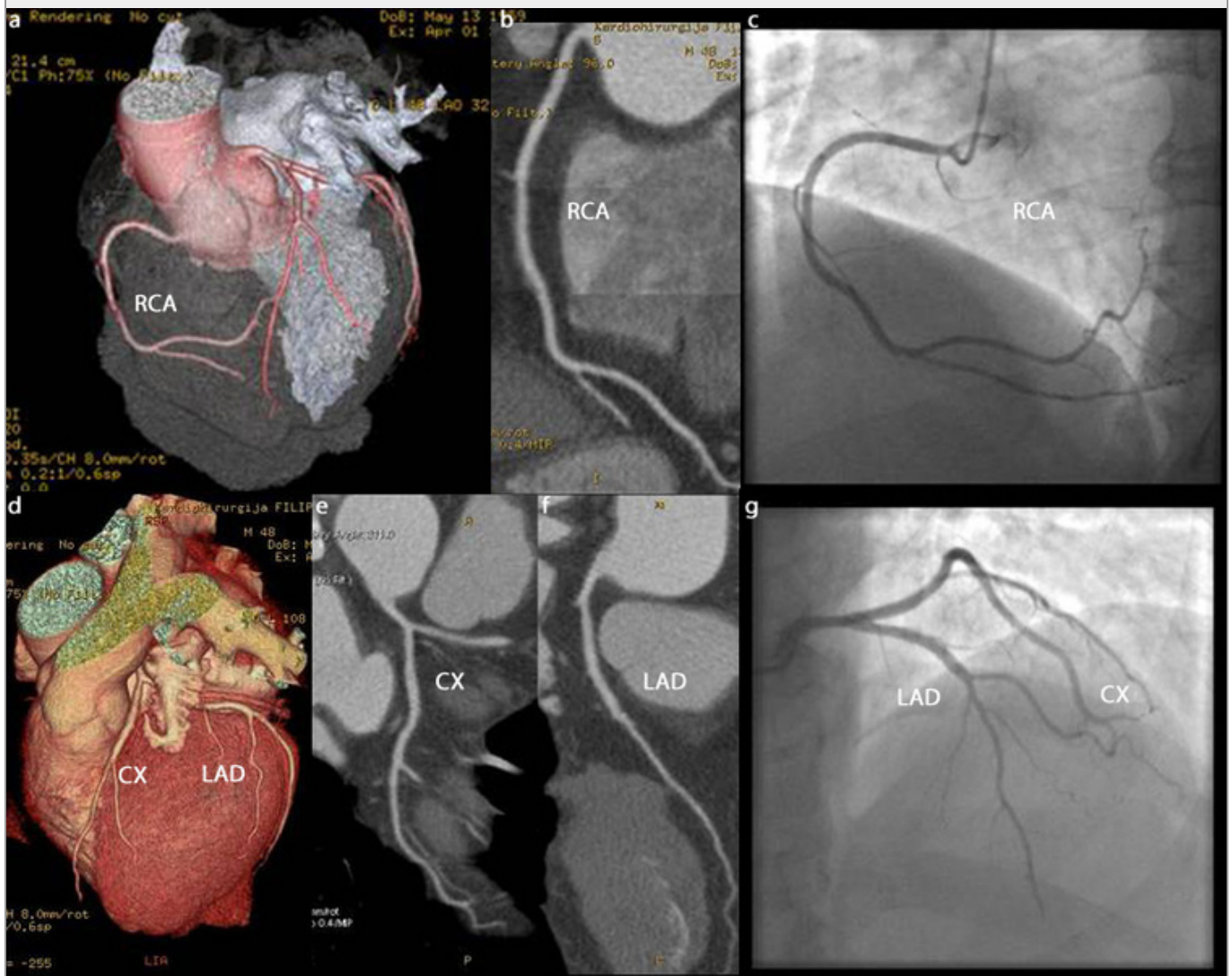
Fifty-six 56 (64%) out of 87 pts were without obstructive coronary lesions (Fig 1), 3 (5%) of them false negative). Thirty-one 31 (36%) out of 87 were with obstructive coronary lesions, 3 (9%) of them false positive. (Fig 2) Out of 28 pts 9 (32%) pts had non significant coronary lesions (Fig 3), 12 (42%) pts underwent PCI/ stenting (Fig 4), because of significant coronary lesions ($\geq 50\%$ luminal narrowing) and 7 (25%) pts underwent operation (CABG) because of multivessel significant disease (Fig 5).

4. Conclusion

64 slice MSCT coronary angiography with it's noninvasivity as an attractive advantage over conventional angiography and it's diagnostic accuracy with very high specificity (94 %) and sensitivity (90%) is a reliable method for preoperative management of patients with non coronary vascular disease.

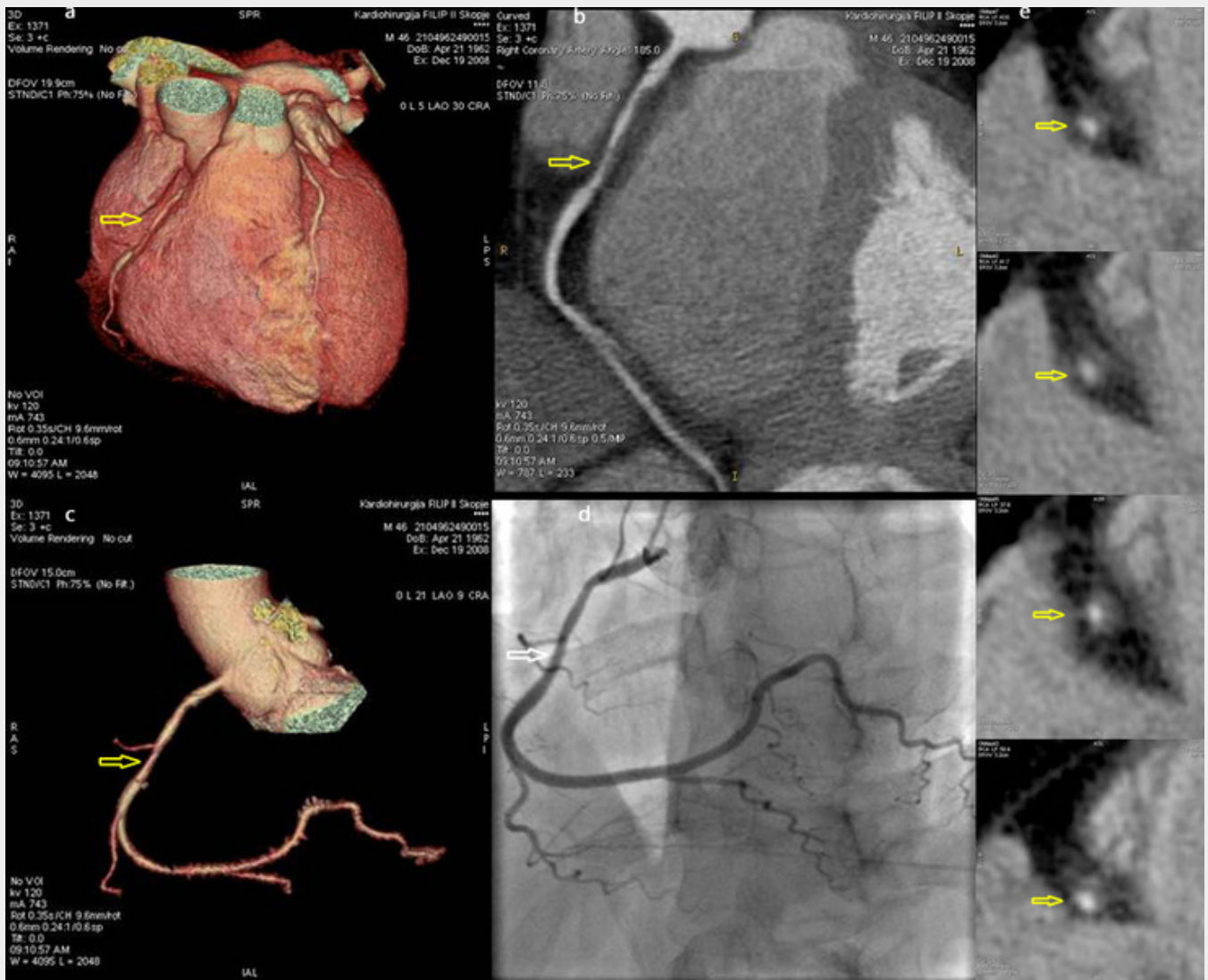
5. Mediafiles

Figure 1



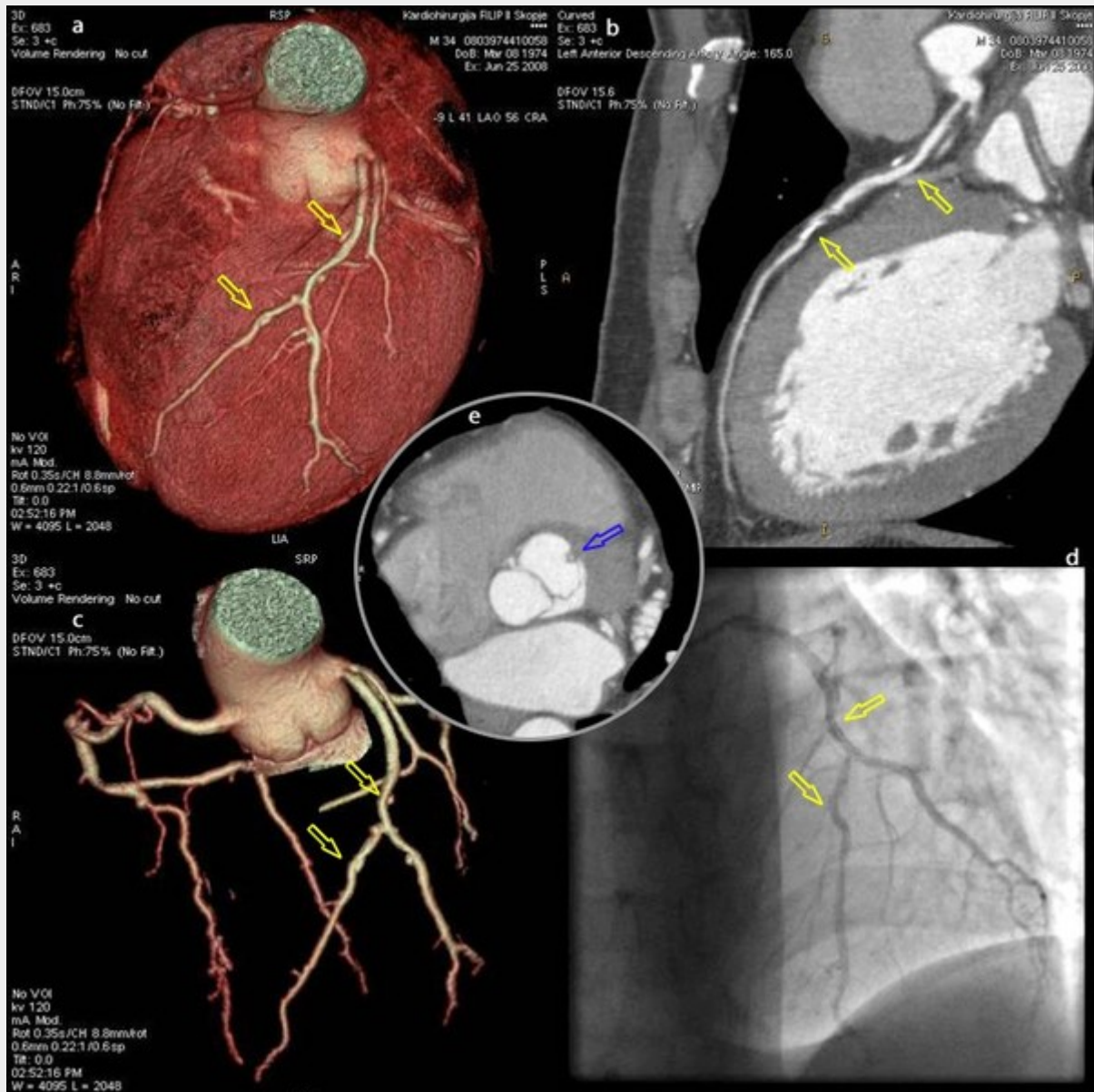
Patient with peripheral arterial occlusive disease (iliac artery). Coronary angiography without obstructive coronary lesions: a,d-64 slice MSCT -3D VRT; b,e,f - 64 slice MSCT -CPR; c,g - conventional coronary angiography

Figure 2



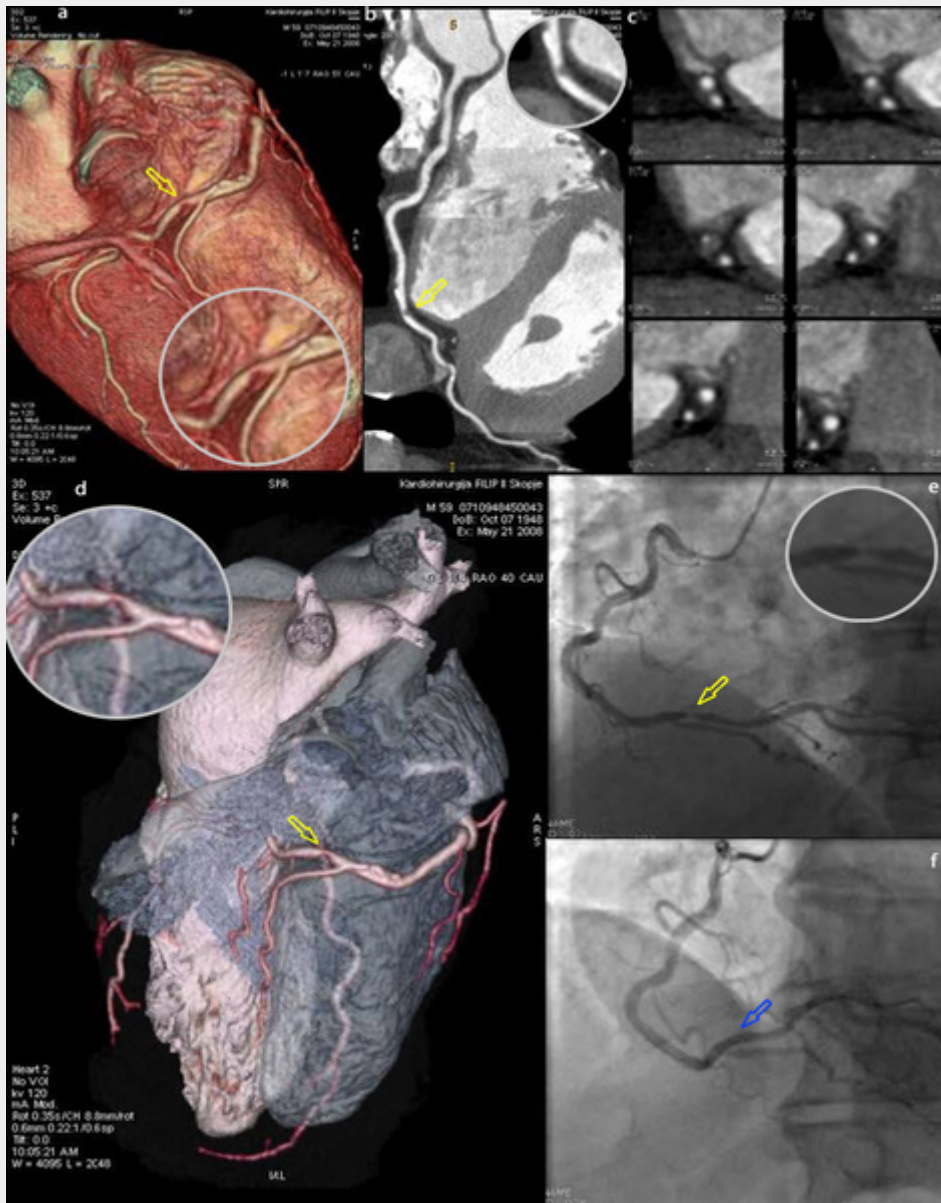
Patient with peripheral arterial occlusive disease (femoral superficial artery). Coronary angiography: RCA-right coronary artery with significant coronary lesion (yellow arrow) a,c -64 slice MSCT -3D VRT; b,e - 64 slice MSCT -CPR; d- conventional angiography - false positive result (white arrow)

Figure 3



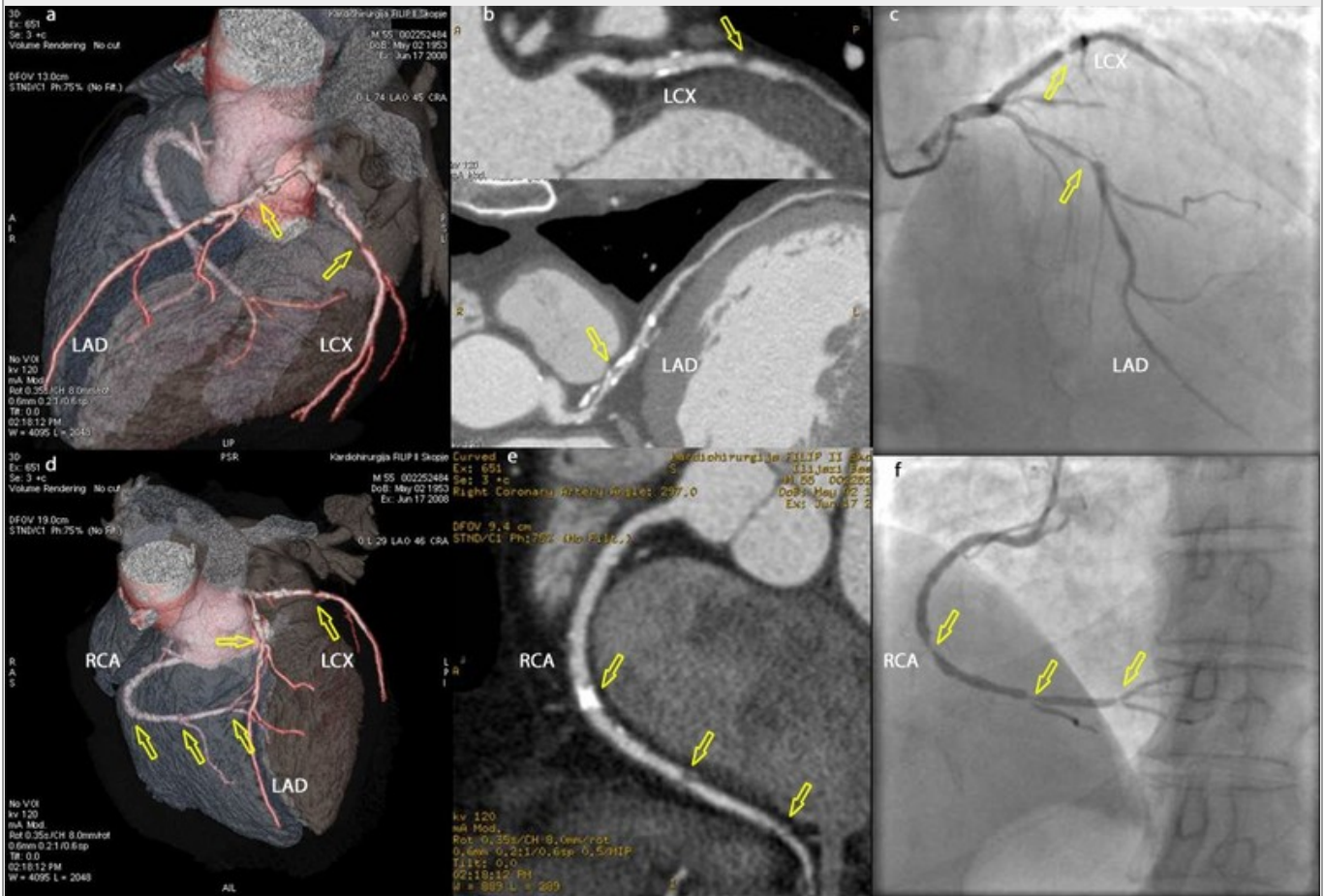
Patient with valvular disease, bicuspid aortic valve. Coronary angiography: LAD, left coronary artery with non significant obstructive coronary lesions (yellow arrow). (a,c -64 slice MSCT -3D VRT; b - 64 slice MSCT -CPR; d- conventional coronary angiography; e - 64 slice MSCT image of bicuspid aortic valve (blue arrow)

Figure 4



Patient with peripheral arterial occlusive disease (carotid artery). Coronary angiography: RCA-right coronary artery with significant coronary lesion (yellow arrow) a,d -64 slice MSCT -3D VRT; b,c - 64 slice MSCT –CPR; e - conventional coronary angiography with confirmation of the stenosis; f -conventional coronary angiography (PCI/stenting) (blue arrow)

Figure 5



Patient with peripheral arterial occlusive disease (subclavian artery). Coronary angiography: multivessel significant obstructive coronary lesions (arrows) a,d -64 slice MSCT -3D VRT; b,e - 64 slice MSCT -CPR; c,f- conventional coronary angiography; CABG recommended