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Evaluation of coronary arteries with ECG gated 64-MDCT in patienst with aortic root pathology

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1. Purpose

The purpose of our study is to show the value of ECG gated 64-MDCT as an non - invasive and reliable method for simultaneous assessment of coronary arteries as part of the aortic root evaluation.

2. Methods and Materials

We performed 55 ECG â€“gated, 64 MDCT examinations to evaluate coronary artery tree in pts suspected for aortic root pathology. A transthoracic (TTE) and/or transesophageal (TEE) echocardiography was initially performed in all patients. Patients (pts) with arrhythmia and non-stable haemodynamic conditions were excluded. Premedicaton with i.v. betaBlocker (presolol) was administrated in all with heart rate > 70 bpm. First an initial non-contrast medium enhanced scans were performed to permit identification of intramural haematoma in all pts suspected for dissection Stanford type A and continuing scanning for abdominal aorta 1,2mm slice (standard protocol for aorta) was done with a single contrast application.

3. Results

From all 55 pts, 29 (53%) were examined because of dissection Stanford type A, 26 pts (47%) because of suspicion for ascending aorta aneurysm. Eighteen 18 (33 %) out of 55 pts were excluded from the study because of high heart rate, severe calcifications or/and disability for breath holding. Entire coronary artery tree evaluation was possible in 27 (73%) patients. Left main coronary artery evaluation was successful in all 37pts (100%) In 35pts (95%) we had successful evaluation of LAD and LCX. RCA evaluation was successful in 30pts (81%)

4. Conclusions

We emphasize the incremental value of this non invasive examination that can successfully evaluate the coronary arteries and aortic root in a single study helping decision making and planning the further treatment in pts with aortic root pathology. Still, heart rate and breath holding seems to be crucial factors that determine the reliability of coronary arteries evaluation.

5. Personal Information

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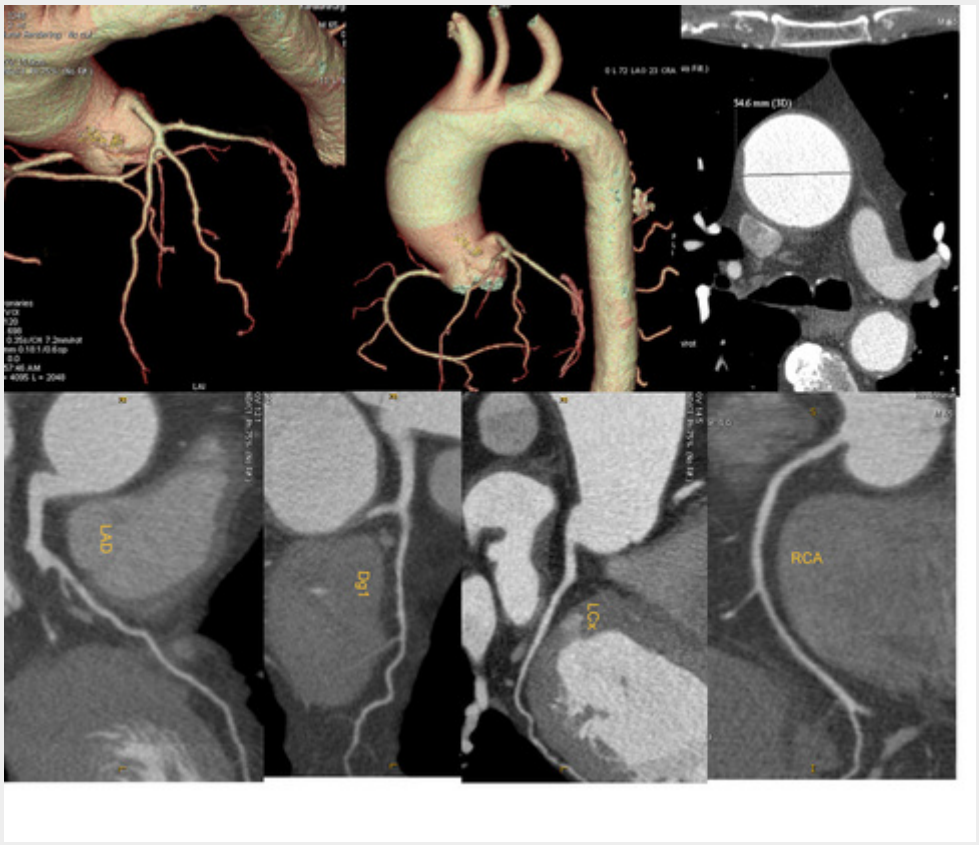
6. Mediafiles

Figure 1

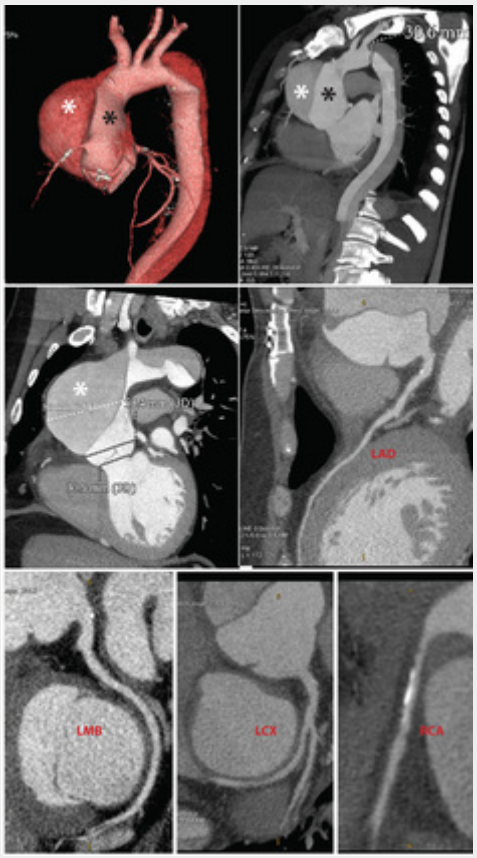
Stanford A aortic dissection. (false lumen - white star, true lumen - black star) with aneurysm of the aortic root. Optimal evaluation of entire arteries tree. CAB not found. Post-op is 1 year after operation.

Figure 2



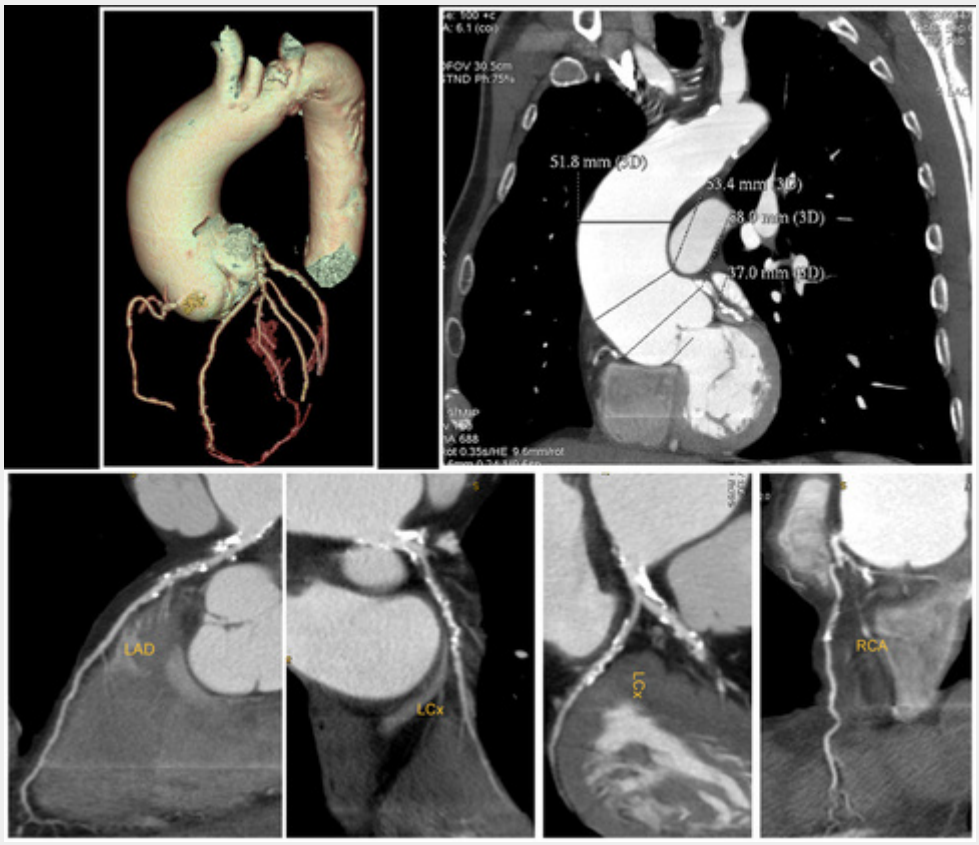
Aneurysm of ascending aorta. Optimal evaluation of entire coronary arteries tree. CAB not found.

Figure 3.



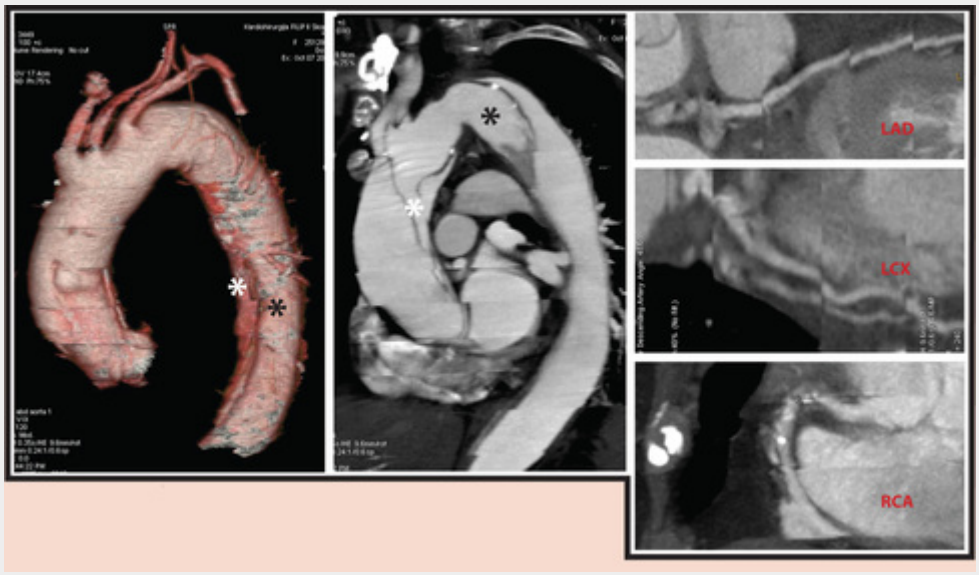
Stanford type A aortic dissection with aneurysm of the aortic root and ascending aorta. (False lumen - white star, true lumen - black star). Optimal evaluation of entire coronary arteries tree.

Figure 4



Aneurysm of the aortic root and ascending aorta. Optimal evaluation of entire coronary arteries tree. Diffuse calcified plaque on all coronary arteries (LMN and LAD with intermediate stenosis.)

Figure 5



Stanford type A aortic dissection. (False lumen - white star, true lumen - black star). Difficult-impossible evaluation of entire coronary arteries tree.