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Cardiac CT - Update

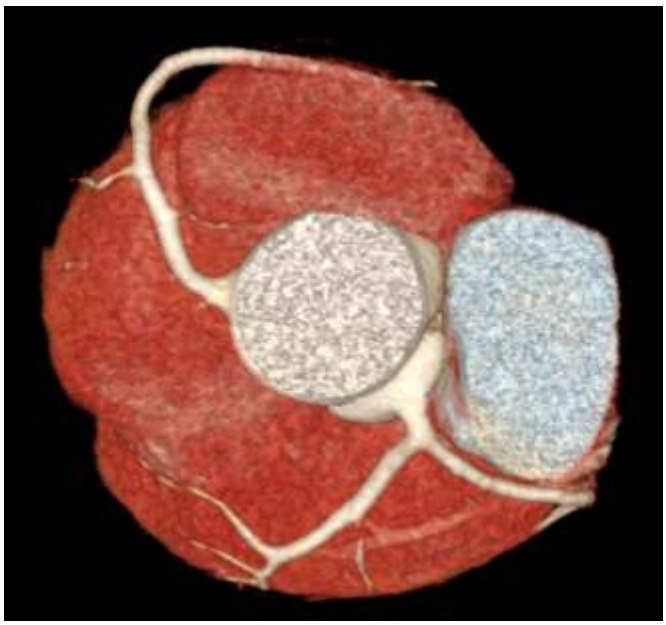

Fig. 1: Normal volume rendered cardiac CT image that rules out coronary artery disease.

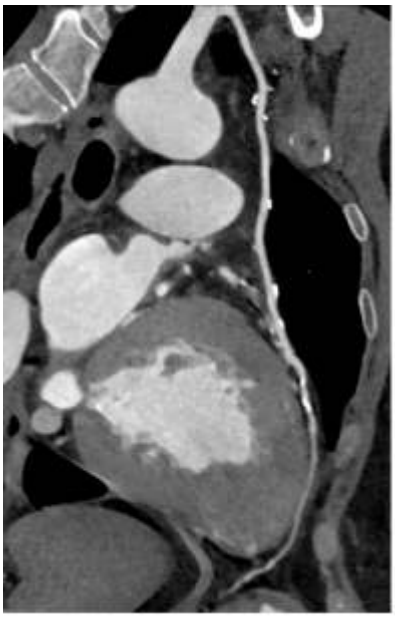

Fig. 2: Post-CABG study. Normal LIMA-LAD graft.

Cardiac CT

Cardiac CT has been around for now more than 12 years. We had introduced the first 64-slice cardiac CT in Asia in Sept 2004.

Since then cardiac CT has become an established modality that is used for

1. Ruling out coronary artery disease (CAD) in intermediate risk asymptomatic patients (Fig. 1)
2. Ruling out CAD in patients with equivocal symptoms and signs
3. Post-bypass evaluation (Fig. 2)
4. Congenital anomalies

Cardiac CT scanners have become faster and better. This allows improved temporal resolution and the ability to see coronary arteries consistently.

The newer dual energy scanners have further improved the ability to see disease. Using the new iterative reconstructions (ADMIRE), it is possible now with better accuracy to

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At a glance

- Cardiac CT has come a long way since it was first introduced in the early 2000s
- The newer dual energy scanners use iterative reconstructions to improve spatial resolution with less radiationsurgery
- Calcified segments and in-stent lumen can be better assessed.
- Cardiac CT is now an accepted modality for those with low to intermediate CAD risk

Fig. 3: Cardiac CT using iterative reconstructions (ADMIRE) shows in-stent occlusion (red arrow). The LAD distal to the occluded stent is opacified due to retrograde flow, which shows much lesser density than the proximal LAD.

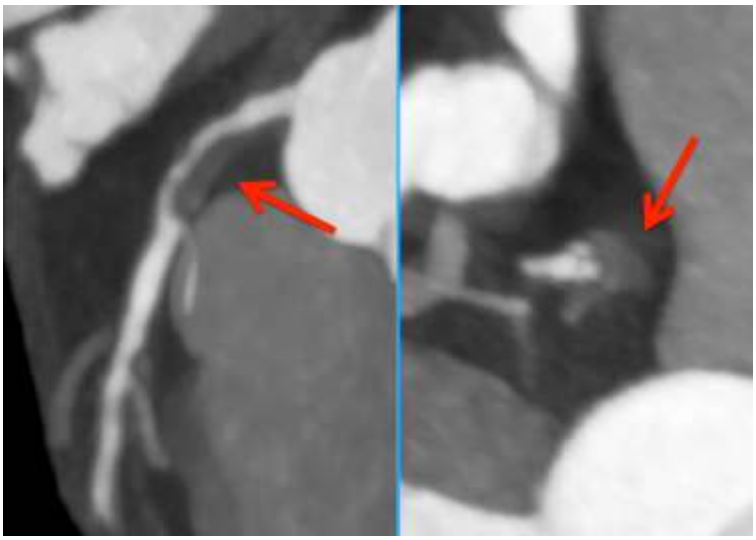

Fig. 4: Vulnerable plaque. This LAD plaque shows positive remodeling and predominant lipid density – this is likely a

evaluate patients with heavy calcification as well as those with stents (Fig. 3). Plaque characterization is also better (Fig. 4).

There are also newer guidelines as below that have shown with data the usefulness of cardiac CT in the evaluation of those with low to intermediate CAD risk.

The newer scanners also use much less radiation, in case that is of concern.

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