Cardiac Imaging (16 Slice MDCT) in Ischaemic Heart Disease

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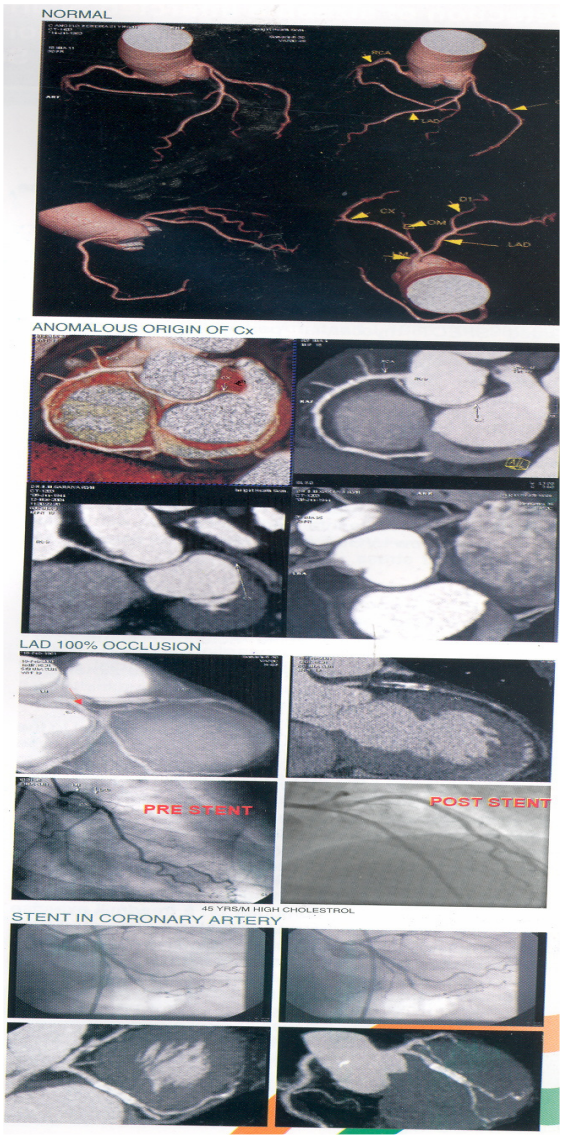
Cardiac imaging has emerged as dominant force in noninvasive technology for evaluation of ischemic heart disease. Coronary artery disease is leading cause of death not only in western nations but also in India especially in metros.

Though catheter angiography is still the gold standard due to its high spatial resolution and options for directly performing interventions, a reliable noninvasive tool for imaging coronary arteries for early diagnosis of CAD is highly desirable.

As far as MRI is concerned with the advent of utlrafast MRI with dedicated cardiac software with the help of MRI PERFUSION and viability programmes using delayed enhancement techniques, significant functional studies are carried out, however MR is suboptimal in imaging coronary arteries.



16-slice MDCT allows submillimeter resolution of substantial anatomic volumes. 16-slice MDCT is proved to be valuable tool for imaging of atherosclerosis disease. Performance of 16-Slice CT with 420 milliseconds rotation represents 40-fold improvement as compared with acquisition speed of Single -Slice CT. Retrospective ECG gating reduces motion artifacts. However heart rate less than 70 beats per minute is desirable for optimal imaging. Now, the scan time is about 16 - 20 seconds where 80 to 120 cc of iodinated contrast preferably non -ionic at the rate of 4 cc per second is used to maintain homogenous vascular contrast through out the scan with 50 cc normal saline chase with single breath hold technique.

Coronary calcium is a marker of atherosclerosis. The absence of coronary calcium at CT
has a high negative predictive value for ruling out the presence of atherosclerosis and of
stenotic coronary artery disease.

MDCT is an excellent technology for evaluation of non-calcified plaques.

MDCT coronary angiography has clinical applications in the following conditions:

1. Asymptomatic Group:

1. High risk for cardiovascular disease.
2. Higher calcium score.

2. Symptomatic Group:

1. Inconsistent stress test.
2. Atypical chest pain.
3. Post CABG status.
4. Post Stent status.
5. Congenital anomalies of coronary artery evaluation.

In our experience in**,** INSIGHT IMAGING CENTER, MUMBAI, INDIA in the last 12 months, we have examined more than 400 patients successfully. Thus we have found an excellent screening tool for coronary artery disease.