

Clinical Perspective on Cardiovascular CT for Referring Physicians

Why CT Coronary Imaging?

More powerful, 64-slice technology has enhanced the diagnostic capability of CT in many areas, none greater than its breakthrough progress in coronary artery imaging. We now have the opportunity to non-invasively detect coronary artery disease at its earliest stages, facilitating treatment and mitigation of future cardiac events.

Both coronary cardiac calcium score (CACS) and coronary CTA can detect the disease process of atherosclerosis at a very early stage:

- Detects wall changes earlier than coronary catheterization
- Detects early soft plaque burden
- Detects calcification
- Recent findings has shown excellent comparison to IVUS
- 68% of myocardial infarctions occur from non-obstructive lesions (<50% stenosis)
- 35% of patients with CAD have a total cholesterol of <200 mg/dl
- 63% of women and 50% of men with sudden cardiac death had no known prior CAD

Therefore, early detection of the disease process is essential.

How good is it?

Calcium is merely a marker for atherosclerotic plaque burden. A greater overall plaque burden increases the likelihood of potentially

unstable lesions. Therefore, calcium may be a marker for future cardiac events because it is a marker for atherosclerosis. The purpose of CACS is the early detection of atherosclerosis, not obstructive disease. This allows the practice of aggressive prevention to keep patients out of the cath lab.

Coronary CTA is 99-100% sensitive and has a high negative predictive value - >99% for a zero score.

Patient Preparation for CTA

The examination is dependent on proper patient preparation and a slow heart rate:

- No caffeine 12 hours before the exam
- Everyone receives oral Beta Blockers, 100 mg of Metoprolol 1 hour prior. Additional 50 mg if HR >70 bpm
- 18 gauge antecubital IV
- Everyone receives O2 by nasal canula
- SL NTG spray immediately before injection

Scheduling Exams

CACS

Although patients may self-refer for CACS, our preference is that it be requested in consultation with the patient's physician, who can provide appropriate follow-up, based on the results. This test is considered a "screening test" by most insurance companies and is not usually a covered exam.

CTA

CTA is currently not covered by most insurance companies. Our staff is glad to assist in obtaining prior authorization if needed. Please call Heart Center of the Rockies at (970) 221-1000 or the Harmony Imaging Center scheduling office at (970) 282-2912.

Which Patients?

Several patient groups have been identified as candidates for CT coronary.

CT Friendly

Patients with mild-moderate risk and typical symptoms

+/- Patients with atypical symptoms

Patency of bypass grafts

Equivocal nuclear medicine or stress test

Think Again

Patients with acute chest pain or very high risk (stable angina ok)

+/- Patients under 40 years old and over 80 years of age

Atrial fib, pacemakers, unable to breath hold

Coronary CTA difficult when CACA > 1000

