

CTA Coronary Arteries

Updated
5/6/2024

Indications - chest pain, tachycardia, hypotension, shortness of breath, dyspnea, orthopnea, abnormal EKG, abnormal cardiovascular study, coronary atherosclerosis, ischemic cardiomyopathy, coronary artery dissection/aneurysm, coronary artery malformation, anomalous coronary artery origin.

Bill under CT Angio Coronary w/ Contrast charge.

GENERAL SCAN NOTES

Move the patient's arms over his/her head if possible. Remove any metal from the imaging field of view.

Topogram - lung apices through diaphragm (obtained during end inspiration).

Craniocaudal scan coverage:

No CABG history - above carina through apex of left ventricle (obtained during end inspiration).

Positive CABG history - lung apices through apex of left ventricle (obtained during end inspiration).

Adjust FOV (field of view) on topogram to smallest without cropping anatomy (target FOV 150-220 mm).

IV Contrast:

Administer **80 mL** Omnipaque-350 (<350 lbs) or **100 mL** Omnipaque-350 (>350 lbs).

Inject at **6 mL/sec** followed by 40 mL saline flush, 20-gauge or larger in AC fossa.

Bolus track off **ascending aorta** triggered at **100 HU + 5 secs**.

EKG Gating

MEDICATIONS

Heart Rate Control

At Home Medications

Metoprolol immediate-release 50 mg or diltiazem immediate-release 30 mg

One tablet the night before and one tablet the morning of the exam.

The prescription for this medication is the responsibility of whomever ordered the CTA.

Pre Exam Medications

Metoprolol 10 mg IV or diltiazem 0.25 mg/kg (up to 25 mg) IV given 5 mins before CTA portion.

Can repeat 5 mg metoprolol every 5 mins as needed.

Only given if patient's heart rate >70 bpm and systolic BP >100 mmHg.

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Contraindications to metoprolol - COPD, asthma, 2nd or 3rd degree heart block, systolic BP <100 mm Hg or allergy to metoprolol.

Contraindications to diltiazem - 2nd or 3rd degree heart block (w/o pacemaker), systolic BP < 100 mm Hg or allergy to diltiazem.

Vasodilatation Medications

Nitroglycerin 0.4 mg tablet given 3-5 mins before CTA portion.

Can cause reflex elevated heart rate (which is blocked by metoprolol).

Given to all patients regardless of heart rate (unless contraindicated)

Contraindications to nitroglycerine - increased intracranial pressure, severe anemia, right-sided myocardial infarction or allergy to nitroglycerin.

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SIEMENS PARAMETERS & RECONS

For Calcium Score scan:

Use technical parameters from calcium score protocol.

Perform calcium score scan in all patients except:

Patients with a history of CABG.

Patients who have had calcium score within past 12 months.

For CTA Coronary scan:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Feed	Acq	Coll	Rot Time	Scan Time
Go Top 64	spiral	100	54	on	on 64	0.31		64	0.6	0.33	4.2
Drive 128	sequential	120	282	on	on		34.5	128	0.6	0.285	1.2
Force 192	sequential	120	288	on	on		39	152	0.6	0.25	1.0

CALCIUM SCORE

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX SOFT	3.0	1.5	Sa36	mediastinum	3	head/feet

CTA CORONARY

AX SOFT	3.0	3.0	Bv40	cardiac	3	head/feet
AX THINS	0.6	0.3	Bv36	cardiac	3	head/feet
AX TRUESTACK	0.6	0.6	Bf44	cardiac	3	head/feet
*AX MULTI 20-80%	0.6	0.3	Bv36	cardiac	3	head/feet
AX LUNG	3.0	3.0	B159	lung	3	head/feet

* Ax Multi 20-80% series only applies with retrospective scans.