

Case of the Week

June 14, 2011



Case

50 yo female with atypical chest pain and positive exercise stress test. RCA and LAD shown.



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Result

Normal CT coronary angiogram. (ie. False positive exercise stress test).
Negative predictive value of CTCA approaching 100%.

What about the radiation dose?

Dose for CT coronary angiogram: DLP 18. ($\times 0.014 = 0.25 \text{ mSv}$). This is **equivalent dose of 2½ chest xrays!!!!** Dose for traditional coronary angiogram (and most other CT scanners) ~ 5 to > 10mSv or more than **25-50 times this dose.**

The key to achieving this low dose - the Siemens Definition FLASH CT.

1. 2 xray sources allowing ¼ gantry rotation for data-set collection with resultant temporal resolution of ~75 ms (as compared with 150 msec for other scanners)
2. High table speed (high pitch) allowing full heart coverage in ¼ s.

No other machine is capable of achieving this imaging at these ultra low doses. We are extending the FLASH application to other studies:

eg CT pulmonary vein anatomy for CARTOMERGE. DLP < 100 not > 500.

CT Pulmonary angiogram . DLP of <100 as compared with 600-800 for "traditional" CTPA