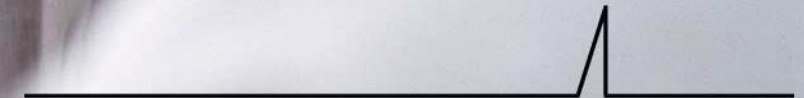


## Cardiovascular CT

A thin black line representing an ECG trace, with a single sharp peak, is positioned above the text.

**How do we manage chest pain patients using Coronary CTA at the lowest possible dose?**

# PE or CAD?

## Pulmonary Embolism or CAD?

John R. Lesser, MD  
Minneapolis Heart Institute



The Minneapolis  
Heart Institute

The Minneapolis Heart  
Institute Foundation



# Patient History

- ✓ 46 year old woman in ER.
- ✓ Question is PE or CAD.
- ✓ Limited contrast load
  - 80 ml.
- ✓ **Want to achieve the lowest radiation dose possible with improved quality scan**

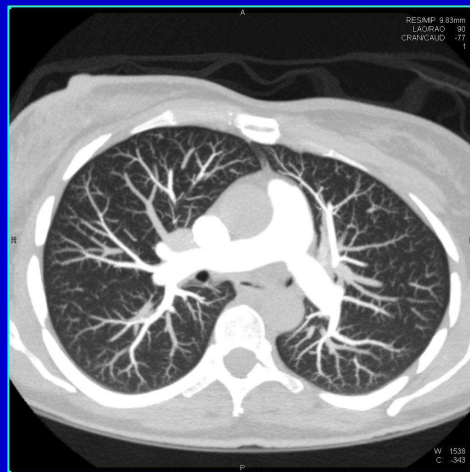
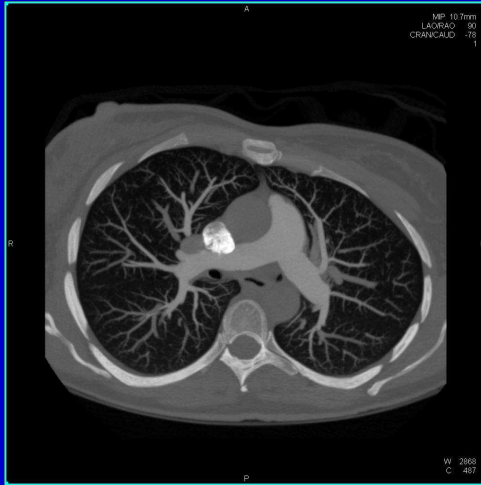


# Protocols

- ✓ Scan protocol was to flash the lungs with no breath hold as contrast crossed the PE en route to a regular coronary sequential scan.
- ✓ Decided against a triphasic injection to ensure an excellent PE and coronary exam.



# One BH and Contrast Injection



Non-BH Flash for PE

Sequential Coronary for CAD

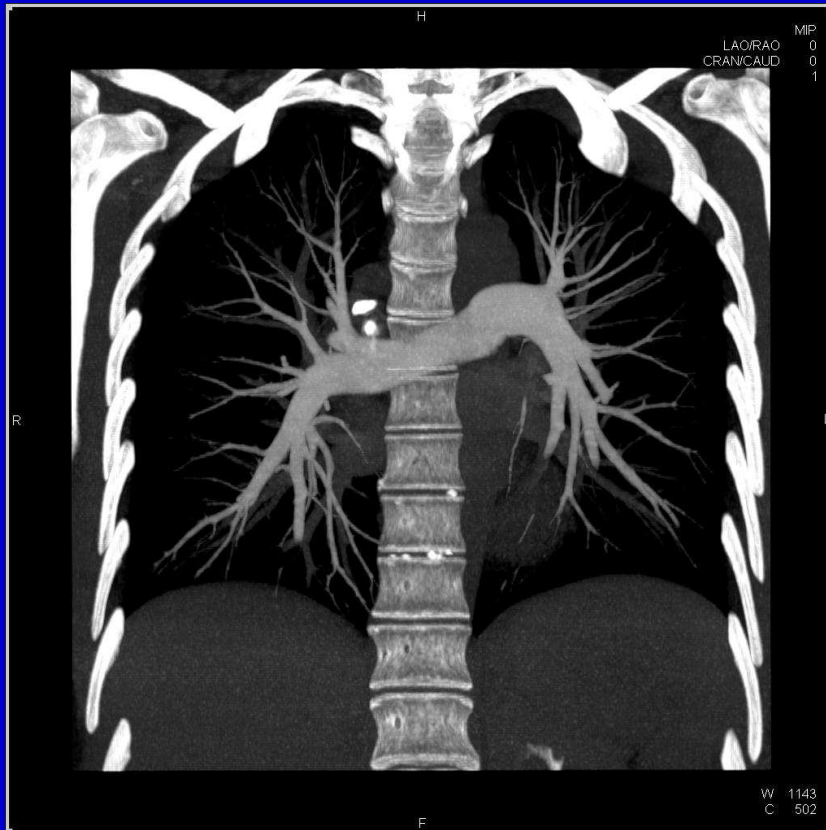


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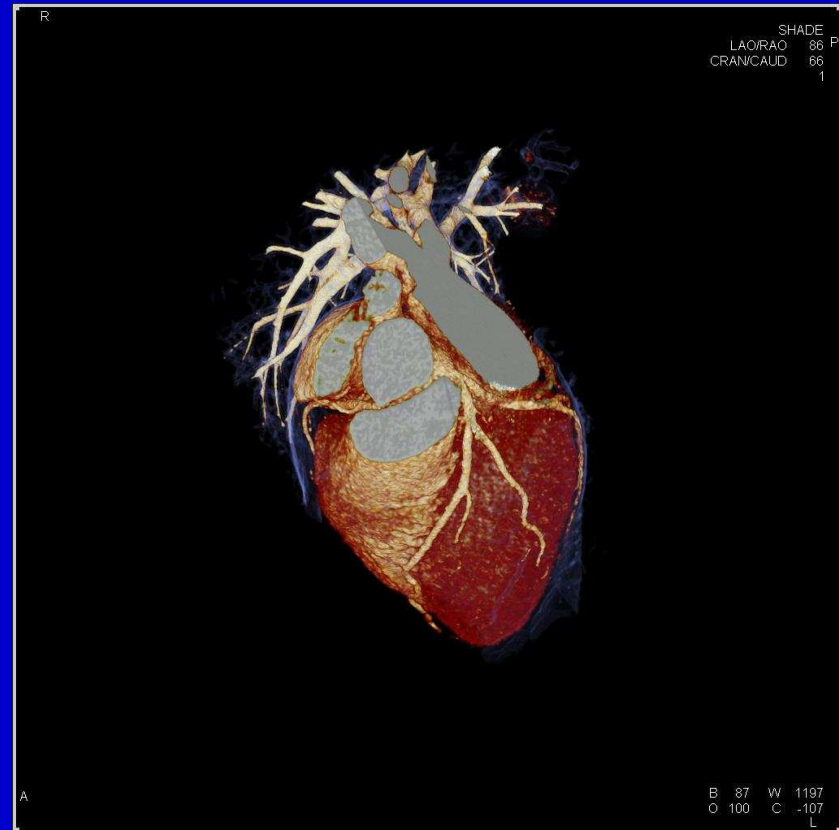
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# Motionless Chest Wall on Non-BH Flash, Small Scan Field for Gated Coronaries



Non-BH Flash for PE



Sequential Coronary CTA

# DOSE

- ✓ Flash PE was 1.8 mSv (100 kV, non-gated flash) and seq coronary was 2.2 mSv (100 kV).
- ✓ All done in a single coronary injection.



## SOMATOM Definition Flash

Flash speed. Lowest dose.

SIEMENS

- Split-second thorax scanning eliminates need for breath hold
- Elimination of  $\beta$ -blockers in coronary imaging with 75 ms true temporal resolution
- Only requires one bolus of contrast to rule out PE and CAD
- Triple rule-out becomes a split-second procedure at a dose below 5 mSv
- Coronary CTA can be performed at <1 mSv in only 0.25 seconds
- Pediatric scans no longer require sedation
- Up to 25% dose reduction for all spiral scans with Adaptive Dose Shield
- Wide bore opening, large generator power, and high table capacity to accommodate challenging patients

