TID and atrial fibrillation
Pre-op evaluation

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Clinical history

- Woman 75 y.o. Hypertension, moderate overweight, dyslipidemia.
- Asymptomatic, pre-op evaluation (gynecological).
- Medication: ACEI, B-blockers.
- ECG: Atrial fibrillation (AF), average HR 80 bpm, otherwise normal.
- Echo: LVEF 48%, no WMA.
- Referred for MPS w/ pharmacologic stress.
- Dipyridamole + rest (2-day protocol); no symptoms, no ECG changes other than previously known AF, BP 135/80 mmHg.
Stress/rest myocardial perfusion study
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Stress/rest gated results
How would you interpret the study?

a) Normal.
b) High risk.
c) More info needed.
d) Low risk.
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• Despite normal perfusion, TID and/or low EF can reflect 3V disease, associated with high risk for cardiac events.

• Because the patient has chronic AF, gating artefact can be present and QC data is needed.
Gated SPECT QC

**Stress**
- **Stress HR = 137 bpm**

**Rest**
- **Rest HR = 77 bpm**
How would you interpret the study?

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• TID can be explained through change in HR between stress and rest gated acquisitions (higher HR, higher volume).

• LVEF is usually not very reliable in the presence of AF.

• However, EF >45% and no evidence of ischemia = low risk.
Teaching points

- QC data is important info when interpreting gated perfusion studies.
- AF and other arrhythmias can cause false EF values.
- Before considering TID, look at HR during acquisition.
- Changes above 10 bpm between acquisitions can cause difference in LV volume calculation.

