Read with the Experts
1430-1515 10/9/16

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Mrs GM 64 year old. Typical sounding chest pain, T2DM, dyslipidaemia, non-smoker.

Stress – Adenosine
Stress ECG – Normal
Symptoms - Nil
• QUESTIONS
2. Urgent cardiological review.
3. Implement anti-anginal therapy, review in 3 months.
4. Invasive coronary angiography.
5. CT coronary angiogram
Mr MT – 64 year old bus driver.
Central burning chest pain.

Risk factors – smoker, hypertension, dyslipidaemia, on therapy.

Stress ECG – Positive – 7.5 minutes 2mm ST segment depression in leads V4, V5 and V6 associated with central burning chest pain.

Settled rapidly.
QUESTIONS
Answer 2.

1. Prior myocardial infarct – treat conservatively.
2. Urgent cardiological review
3. Institute optimal medical therapy for mild to moderate IHD.
4. CT coronary angiogram
5. Invasive coronary angiography
Mr AJ - 71 year old recreational pilot.

Atypical / typical left-sided chest pain not related to effort.
Risk Factors – R/F, mild hypertension, non-smoker, non-diabetic.
Stress – Exercise
Stress ECG – Normal.
QUESTIONS
Answer 3.

1. Reassure.
2. Urgent cardiological review
3. Urgent cardiothoracic surgical consultation
4. CT coronary angiogram
5. Clinical diagnosis – IHD- Institute optimal medical therapy
Mr BC– 64 year old.

Atypical chest pain.
Risk Factors – Dyslipidaemia, smoking, hypertension.
Stress: Bruce protocol
Stress ECG: 10.5 mins  Peak HR 130  Mildly positive,
2.0 mm planar ST segment depression lateral leads.
ECG: Recovered in 1.5 minutes.
QUESTIONS
Answer 4.

1. Reassure.
2. Go to the Pub.
3. Remain clinically suspicious, careful monitoring.
4. CT coronary angiogram.
5. Invasive coronary angiogram.
CONCLUSION: This is a normal myocardial perfusion study. Following an adequate exercise stress and in the absence of chest pain and positive stress ECG, myocardial perfusion, both at rest and at peak exercise, is unchanged and normal. The LV systolic function is well preserved, with an estimated LVEF of 63%. Given the degree of positivity of the stress ECG, the patient's symptoms and difficulty in achieving an adequate heart rate, further evaluation with a CT coronary angiogram is suggested. This could be arranged if requested.
Mrs CO – 68 year old female T2DM, smoker and atypical chest pain, referred for MIBI scan.

Stress – Pharmacological
Stress ECG – Normal.
Symptoms – Nil.
QUESTIONS
1. Normal.
2. Normal and reassure.
3. Go to the pub.
4. Mild abnormality in the lateral wall.
5. CT Angiography – better study.
We followed-up 1,126 generally asymptomatic subjects without previous cardiovascular disease who had a CACS and stress SPECT scan performed within a close time period (median 56 days). The median follow-up was 6.9 years. End points analyzed were total cardiac events and all-cause death/myocardial infarction (MI).

An abnormal SPECT result increased with increasing CACS from <1% (CACS ≤10) to 29% (CACS >400) (p < 0.001). Total cardiac events and death/MI also increased with increasing CACS and abnormal SPECT results (p < 0.001). In subjects with a normal SPECT result, CACS added incremental prognostic information, with a 3.55-fold relative increase for any cardiac event (2.75-fold for death/MI) when the CACS was severe (>400) versus minimal (≤10). Separation of the survival curves occurred at 3 years after initial testing for all cardiac events and at 5 years for death/MI.

The CACS and SPECT findings are independent and complementary predictors of short- and long-term cardiac events. Despite a normal SPECT result, a severe CACS identifies subjects at high long-term cardiac risk. After a normal SPECT result, our findings support performing a CACS in patients who are at intermediate or high clinical risk for coronary artery disease to better define those who will have a high long-term risk for adverse cardiac events. (J Am Coll Cardiol 2009;54:1872–82) © 2009 by the American College of Cardiology Foundation
49-year-old female
- Chest pain, positive EST
- Normal stress/rest MIBI
- Normal CACS = 0

confirming that she did not have significant CAD.

J Nucl Cardiol 2005;12: 392-400
68-year-old female without known CAD
- chest pain
- risk factors: age & positive family history. - Normal stress / rest MIBI
- CACS = 1753, marked calcification in LAD, LCx, LM
- reclassified from no significant CAD to significant disease, and
aggressive medical therapy was started.
Question 6.


Stress – Bruce protocol, 8 minutes.
Heart Rate Response – Normal.
Blood Pressure – Normal.
Stress ECG – Normal.
QUESTIONS
Answer 6.

1. Normal.
2. Normal and reassure.
3. CT Angiography – more appropriate study.
4. Calcium Score – cheapest and best test for this patient.
5. Do nothing.
Which patient has coronary artery disease?

Patient #1

Patient #2
Which patient has coronary artery disease?
D-SPECT® and Dynamic SPECT*
Case Study 1

Stress

Rest

Single infero-lateral defect...

FFR:
- LAD: 0.47
- LCX: 0.74
- RCA: Occlusion

However, all territories are abnormal as measured by CFR on the D-SPECT and invasive cath.
Case Study 2

74yo, male, HT, DM, DLP

Stress

Rest

Normal appearing perfusion scan...

However, all territories are abnormal as measured by CFR on the D-SPECT and Coronary Calcium Score = 5800, showing extensive evidence of underlying CAD.