Atypical pain and normal exercise test

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Clinical history

- 67-year old male with several coronary risk factors.
- Atypical angina (abdominal discomfort at stress).
- Normal exercise ECG.
- Submitted for stress myocardial perfusion study (MPS).
- Exercise/rest MPS was performed with $^{99m}$Tc-sestamibi.
Is the perfusion study appropriate?

a) No; there is no evidence it would guide the management.
b) Yes; there is evidence it could guide the management.
c) No; the functional test of choice is stress echo.
d) a & c are correct.
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- According to Bayes’ theorem, MPS is indicated for diagnosis in patients with intermediate pre-test probability of coronary artery disease (CAD).
- Because of age, gender and having atypical symptoms with negative exercise test, our patient is a typical candidate for the test and the result could guide the management (conservative or invasive).
Myocardial perfusion study
The perfusion result is consistent with:

a) Anteroseptal defect - due to LBBB.

b) Anterior wall infarction + technical artifact.

c) Anterolateral + inferolateral ischemia.

d) Inferior + inferolateral ischemia.
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d) **Inferior + inferolateral ischemia.**

- There is a perfusion defect at stress (upper row at each panel) involving the inferior and infero-lateral walls, which normalizes almost completely at rest (bottom row at each panel).
- This is a reversible defect representing ischemia in the territory of the right coronary artery (RCA).
- Some uptake deficit is still present at rest, probably due to diaphragmatic attenuation which is more common in men (normal finding).
Follow-up

• The patient was submitted to the cath lab.
• Coronary angiography revealed a critical stenosis of RCA, PTCA was performed successfully and a drug-eluting stent was placed.
• There were lesions with <50% luminal stenosis in the circumflex artery (Cx) and first diagonal branch.
• The patient remained asymptomatic at 6 months after the procedure.
Teaching points

• Abdominal pain / discomfort is not infrequent in patients with inferior wall ischemia.

• Sensitivity of exercise ECG is limited, especially in patients with one-vessel disease.

• Functional non-invasive stress imaging is indicated in patients with intermediate probability of CAD.

• MPS has the ability to identify disease in individual arteries, since the perfusion abnormalities usually correlate closely with coronary territories.
Bibliography

