Previous MI with no intervention

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Clinical history

- Woman 68 y.o.
- Recent acute MI (3 weeks) with no intervention.
- Discharged with medical treatment.
- Shortness of breath and chest discomfort.
- ECG: Atrial fibrillation, complete arrhythmia, Q in V3-V5.
- The patient underwent a stress/rest myocardial SPECT study with $^{99m}$Tc-MIBI and dipyridamole.
Myocardial perfusion study
The perfusion result is consistent with:

a) Myocardial infarction.
b) Myocardial ischemia.
c) Myocardial infarction + ischemia.
d) Myocardial infarction + technical artifact.
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c) **Myocardial infarction + ischemia.**
d) Myocardial infarction + technical artifact.

- There is a large, partially reversible defect involving the anteroseptal and apical regions.

- Together with history of MI, Q waves in V3-V5 and chest pain, the finding guides to the diagnosis of MI + ischemia.
Quantitation of perfusion and function
The quantitative results indicate:

a) Normal LV function.
b) Post-ischemic myocardial stunning.
c) Depressed LV function due to myocardial scar.
d) Calculated LVEF values are questionable.
The quantitative results indicate:

a) Normal LV function.
b) Post-ischemic myocardial stunning.
c) Depressed LV function due to myocardial scar.

d) *Calculated LVEF values are questionable.*

- Although depressed LV function can be expected in a patient with MI and ischemic response, LVEF values are not very reliable due to atrial fibrillation with arrhythmia (gating error).
The following is(are) associated with poor prognosis after MI, and therefore should be investigated:

a) Inducible ischemia.
b) Depressed ventricular function.
c) Ventricular arrhythmias.
d) All of the above.
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d) All of the above.

• Myocardial ischemia, low LVEF and ventricular arrhythmia are linked to high rate of cardiac events after MI and are powerful prognostic markers guiding therapeutic decisions.
The following factor(s) is(are) can be investigated with nuclear techniques:

a) Inducible ischemia.
b) Ventricular function.
c) Ventricular arrhythmias.
d) a & b only.
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a) Inducible ischemia.
b) Ventricular function.
c) Ventricular arrhythmias.

d) a & b only.

• Stress/rest myocardial perfusion and LV function can be assessed by gated SPECT, however electrical disorders should be evaluated through other methods like Holter monitoring.
Teaching points

- Non-invasive functional imaging is indicated after AMI for risk stratification and treatment guidance.

- Inducible ischemia, depressed LVEF and arrhythmias are key prognostic factors and should be addressed promptly in order to decrease the risk for future cardiac events.

- Complete arrhythmias (especially due to atrial fibrillation) can interfere with gated acquisition, difficulting the evaluation of LVEF and wall motion.
Bibliography


