Single episode of chest pain post-PTCA, with normal ECG and enzymes

F. Mut, M. Kapitan
Nuclear Medicine Service, Italian Hospital
Montevideo, Uruguay
Clinical history

- 54 y.o. woman.
- Smoker, dyslipidemic, asthmatic.
- Acute coronary syndrome 3 ys. ago with PTCA (LCx).
- Admitted for single episode of chest pain radiated to neck.
- Rest ECG and enzymes negative for AMI.
- Submitted for stress MPS with exercise.
Myocardial perfusion study
Myocardial perfusion study
The study result is consistent with:

a) Normal perfusion, congenital abnormality.

b) Lateral wall infarction.

c) Normal perfusion, technical artefact.

d) a & c can be true.
The study result is consistent with:

a) Normal perfusion, congenital abnormality.
b) Lateral wall infarction.
c) Normal perfusion, technical artefact.
d) *a & c can be true.*

- There is a pseudo-defect at the basal portion of the lateral wall, but the LV seems to be “mirrored” (see also polar maps) so this is not a true defect but the normal appearance of the proximal septum.

- The finding can be attributed to a congenital abnormality (dextrocardia) or to a technical error during acquisition or processing.
To resolve the matter, you would:

a) Review the QC acquisition parameters.
b) Review the ECG.
c) Examine the patient.
d) All of the above.
To resolve the matter, you would:

a) Review the QC acquisition parameters.

b) Review the ECG.

c) Examine the patient.

d) All of the above.

• By reviewing the acquisition parameters, one should identify any major technical errors (i.e. wrong camera rotation or patient positioning), as well as anatomical abnormalities.

• ECG and patient examination (auscultation) could give clues for confirming/excluding congenital abnormalities.
• Anterior view of the raw images demonstrating the heart on the right side of the chest and reverse placement of abdominal organs in *situs inversus.*
Follow-up

- Dextrocardia was known because of previous cardiological history including percutaneous intervention.
- ECG was normal but using inverted leads.
- The conclusion was normal stress/rest perfusion study.
- The patient was subsequently discharged and medical treatment optimized.
- No recurrent episodes of chest pain at 6 months.
Teaching points

• Dextrocardia is a congenital defect in which the heart is situated on the right side of the chest.

• There are 2 main types of dextrocardia: isolated dextrocardia and dextrocardia with situs inversus.

• In patients with dextrocardia, 180-degree imaging should be performed on a SPECT camera from the left anterior oblique to right posterior oblique rather than the usual right anterior oblique to left posterior oblique.

• The perfusion images highlight the normal difference in length between the septum and lateral wall as seen in the vertical long-axis views, regardless of cardiac position.
Bibliography

• Danias PG, Manning WJ. Is this right? (...or is it left?). Circulation 1999; 100:209-10.

