Systolic wall thickening and prone acquisition as tools to reduce false positives in the interpretation of the SPECT myocardial perfusion study

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Myocardial perfusion imaging (MPI) is commonly used to assess qualitatively and quantitatively the perfusion pattern and left ventricular (LV) function including systolic wall thickening (SWT).[1,2]

A 63 year-old man, with cardiovascular risk factors (but without history of prior myocardial infarction) underwent stress/rest ^{99m}Tc-MIBI MPI before aortic aneurysm surgery.

The stress test was performed with dipyridamole and was negative for ischemia. The MPI demonstrated a fixed perfusion defect in the inferior, inferoseptal, and inferolateral walls (Figure 1A, B). The gated images revealed normal wall motion and normal SWT by visual and automated analysis (Figure 2A–C). Prone imaging was performed,[3] which showed normal perfusion (Figure 3).

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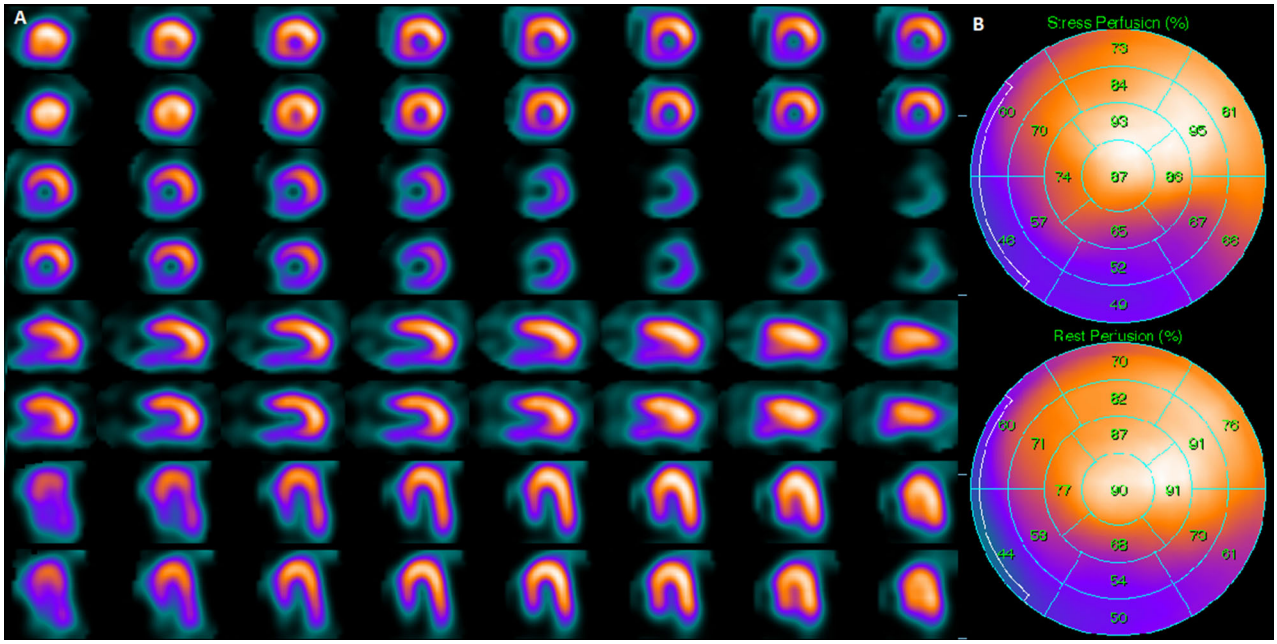

Figure 1. Myocardial SPECT. (**A**) Short, vertical, and horizontal long-axis in stress-rest phases. There is a fixed perfusion defect in the inferior, inferolateral, and inferoseptal walls. (**B**) Polar maps corroborate the presence of perfusion defects.

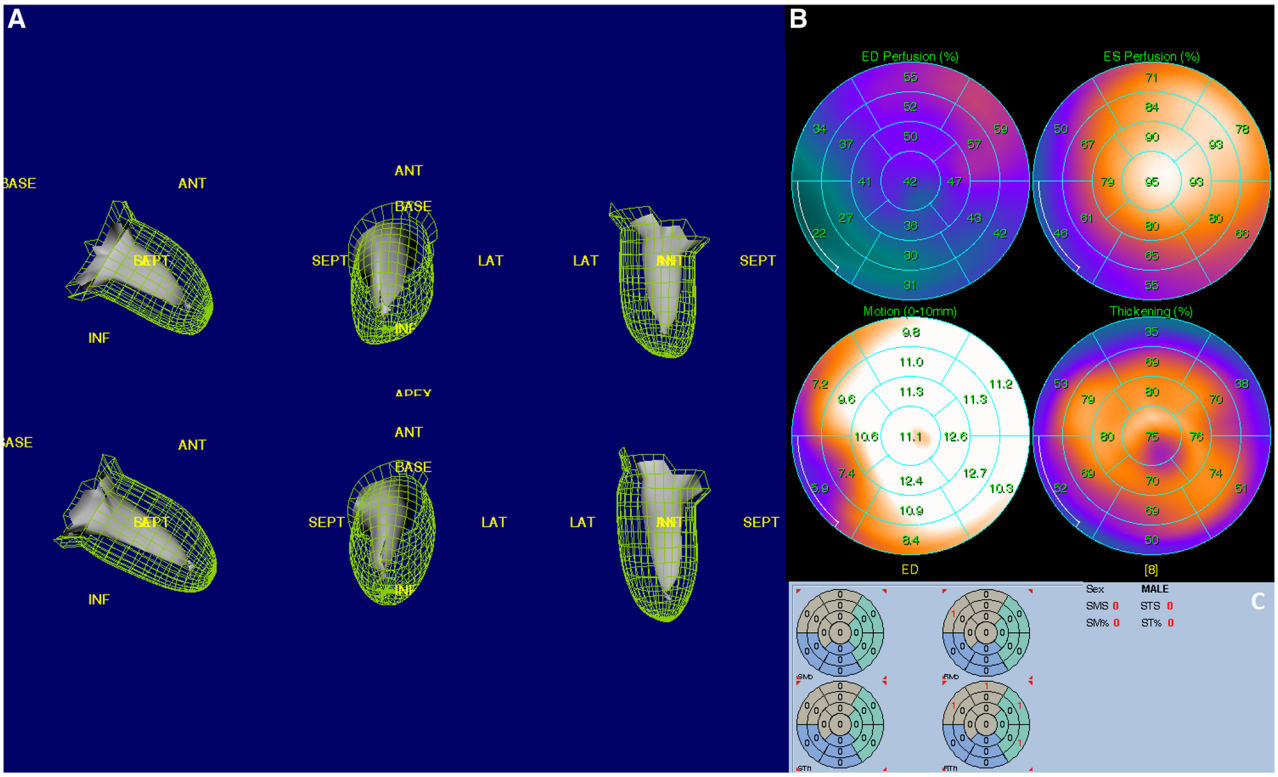

Figure 2. **A** Normal 3D motion views. **B** Polar maps show normal motion and normal SWT. **C** 17-segment polar maps, show normal SWT in stress and rest images. The scores of wall motion and SWT were normal.

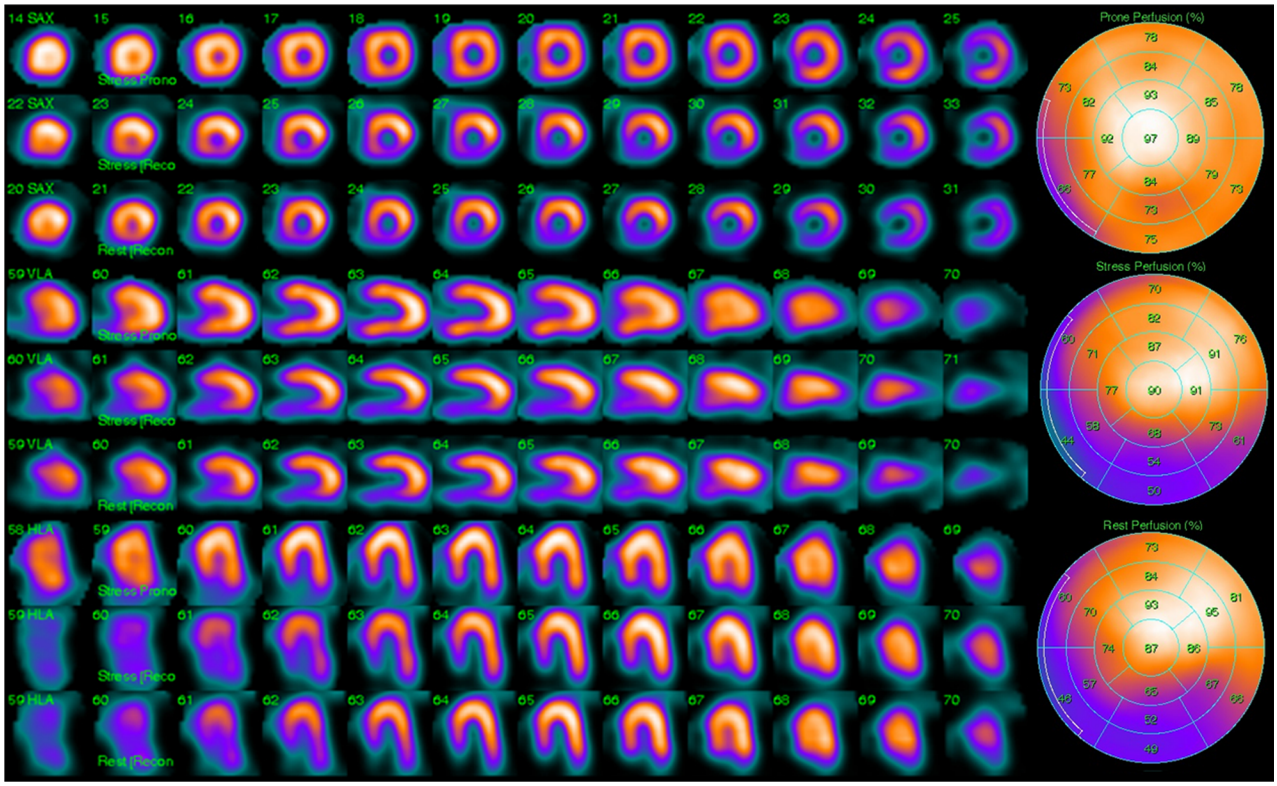

Figure 3. Short, vertical, and horizontal long-axis in prone (upper) and stress-rest supine (middle and lower rows) images. Myocardial perfusion in prone acquisition is normal, and polar map corroborates this finding.

The message from our case presentation is that a mismatch pattern between perfusion (fixed defect in the inferior wall) and SWT, prone imaging provides a satisfactory accuracy to identify artifacts, when attenuation correction is unavailable.

Disclosure

The authors declare that there is no conflict of interest to disclose.

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