

Real-time myocardial perfusion imaging during dipyridamole stress echo

Clinical Case Portal

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Authors:

Jesus Peteiro, MD, Alberto Bouzas, MD

Alberto Bouzas, MD

Unit of Echocardiography, Juan Canalejo Hospital, University of A Coruña, Spain.

Abstract

Case report Summary

A 50 year-old-male patient, who had suffered a lower limb amputation 4 years before and therefore was unable to exercise, was referred to our lab for stress echo.

Case Report

The patient has had an anterior acute myocardial infarction 9 months before, that was treated by primary angioplasty in the left anterior descending artery (LAD). He also had lesions in the left circumflex (70%) and proximal right coronary artery (75%) which were not treated.

The patient was admitted to hospital for chest pain with troponine negative and without significant changes in the ECG. We decided to perform a dipyridamole stress echo with real time myocardial contrast imaging (MCE). Dipyridamole echo was performed according to the fast high dose protocol (0.84 mgr/K in 6 minutes) and MCE was performed with a continuous infusion of Sonovue and MI of 0.1.

Resting 2-dimensional (2-DE) images showed severe hypokinesia in the LAD territory, and normal regional function in the other territories. Ejection fraction (LVEF) was 45%. Resting MCE showed a nice filling of the myocardium in the 4 chamber view, except in the apicolateral region where a mild defect

was qualitatively seen (Fig 1). Also, quite a nice filling after the flash in the anterior and posterior regions in the 2 chamber view were seen (Fig 2).

At peak stress a great defect in almost all regions, but the septum, was seen after the flash: apical, lateral, anterior and posterior (Figs 3 and 4)

A concordant pattern of wall motion abnormalities during stress was seen with 2-DE. (Figs 5 and 6). At low dipyridamol dose there are not many changes, but at peak dose there is dilation of the LV and global wall motion abnormalities with akinesia or diskinesia anterior and severe hypokinesia lateral and septal.

Contrast allowed accurate assessment of LV volumes and EF. In this case EF changed from 45% to 25% (Fig 7).

The MCE results can be depicted by a perfusion map according to this parametric image that represent A times Beta at the time of the R wave in several images (Fig 8).

As expected, coronary angiography in this patient showed a very severe, 99%, intrastent reestenosis in the proximal LAD, and the known significant lesions in the circumflex and right coronary arteries (Fig 9). Note also the coronary collaterals from the LAD to the LCx artery territory. This patient was successfully treated by 4 Taxus stents in all the lesions.

The patient went well, and a routine angiography 1 year later showed a good state of the implanted stents an ejection fraction of 52%.

A 2-DE performed 2 years later showed LVEF of 54%, with only mild hypokinesia in the LAD territory (septoapical and posteroapical) (Fig 10).

Conclusion

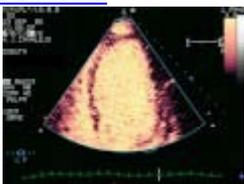
We have showed you a case of myocardial perfusion during dipyridamol stress echo in which perfusion was useful to demonstrate viability in the LAD territory in resting conditions, and multiterritory ischemia at peak stress.

References

Email: pete@canalejo.org

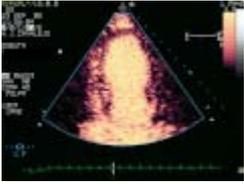
Video 1 :

[Movie 1](#)

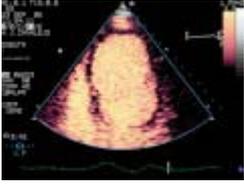


Video 2 :

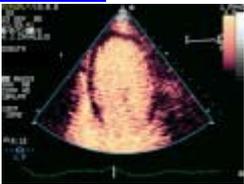
[Movie 2](#)



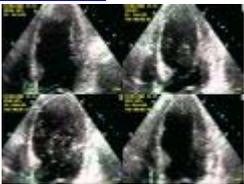
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[Movie 3](#)



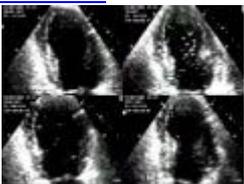
Video 4 :
[Movie 4](#)



Video 5 :
[Movie 5](#)



Video 6 :
[Movie 6](#)



Video 7 :
[Movie 7](#)

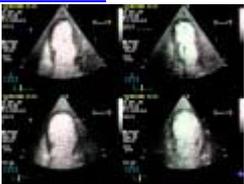
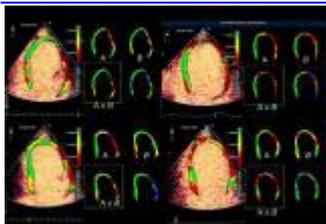


Fig. 1 :

[A times Beta in a color scale](#)



Video 8 :

[Movie 9](#)



Video 9 :

[Movie 10](#)

