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Ischaemia: Normal Example

Clinical Case Portal

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          Non-invasive imaging: Echocardiography, MR/CT, Nuclear

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Abstract

Case from the Contrast Echo Box Detection of Ischaemia

Introduction

Rest exam: A 66 year old lady with progressively increasing breathlessness. Resting study normal. Unable to perform exercise, then patient was referred for pharmacological stress echocardiography. Normal perfusion at rest in all territories (as expected given normal wall motion)

Stress exam: Repeat imaging performed after dobutamine intravenous infusion. Heart rate 130-140 bpm, so full replenishment expected in 3-4 beats (see Chapter on practice). Note the rapid replenishment indicating normal perfusion in all walls.

Case Report

Normal Example - REST

Real-time low MI perfusion imaging (fig 1-3)

Note:

- Low MI imaging (0.10 L) in top right corner with a high MI (0.65 F) for the ‘flash’ to destroy microbubbles
- Bright images (gain usually >60%, often almost 70%).
- Normal replenishment within 5 cardiac cycles of bubble destruction by flash impulses.

Triggered low MI perfusion imaging (fig 4-6)

Note:

- Low MI imaging (0.10 L) in top right corner with high MI (0.65 F) ‘flash’
- The red triangle on the ECG above each T wave, as there is end-systolic triggering of images
- Normal replenishment within 5 cardiac cycles of bubble destruction

Normal Example - STRESS

Real-time perfusion assessment following dobutamine (HR 130-140 bpm) (fig 7-9)

Note:

- Rapid replenishment of microbubbles in all walls within 2-3 cycles of flash

Triggered imaging perfusion assessment following dobutamine (HR >130 bpm) (fig 10-12)

Note:
- Rapid replenishment of microbubbles in all walls within 2-3 cycles of flash

Video 1:
Normal Rest AP4C

Video 2:
Normal Rest AP2C

Video 3:
Normal Rest AP3C

Video 4:
Normal Rest AP4C - triggered

Video 5:
Normal Rest AP2C - triggered

Video 6:
Normal Rest AP3C - triggered

Video 7:
Normal Stress AP4C

Video 8:
Normal Stress AP2C

Video 9:
Normal Stress AP3C

Video 10:
Normal Stress AP4C - triggered

Video 11:
Normal Stress AP2C - triggered

Video 12:
Normal Stress AP3C - triggered