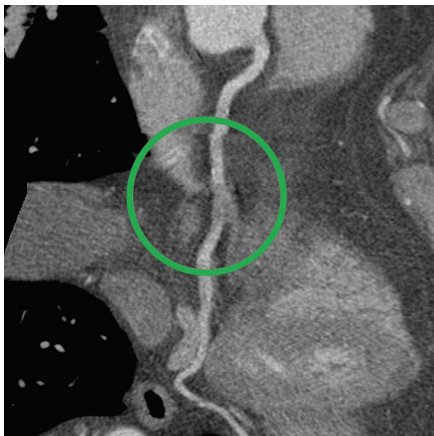


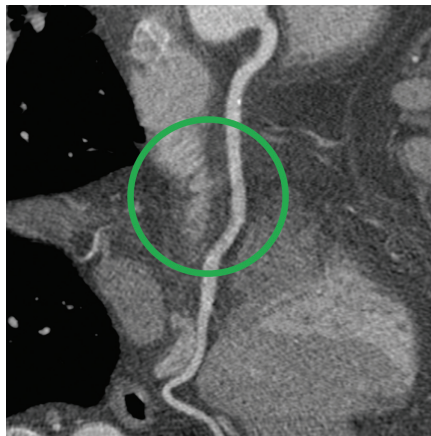
SnapShot* Freeze Motion-corrected CCTA

CT clinical case study—cardiac CT

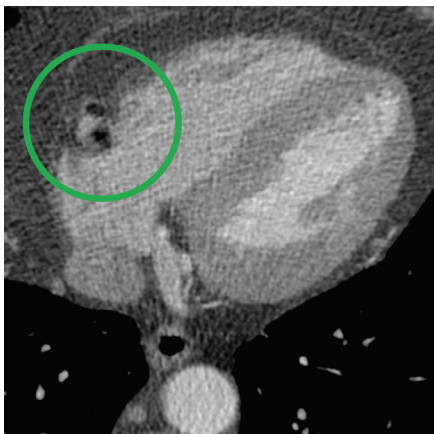
David Dowe, MD, FACR
Medical Director, Cardiac CT Program
Atlantic Medical Imaging
Galloway, NJ USA



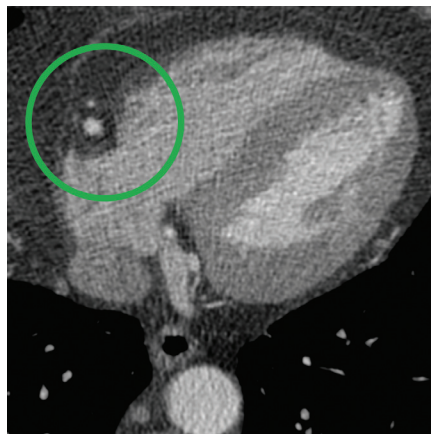
Original image



With SnapShot Freeze



Original image



With SnapShot Freeze



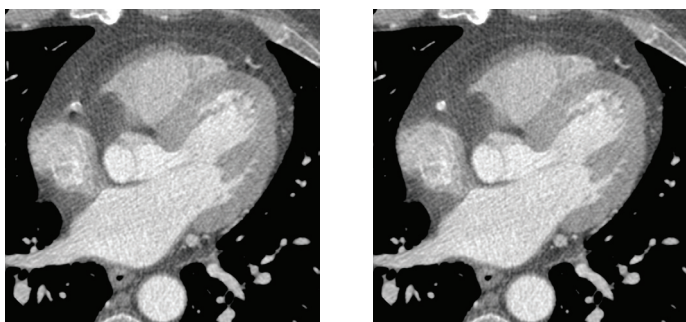
Chest pain and equivocal stress test

Introduction

As a pioneer in multi-detector CT (MDCT), Dr. David Dowe's clinical practice has benefited from ASiR** dose-reduction technology and the increased spatial resolution of the Discovery* CT750 HD scanner when evaluating the coronary arteries.

Based on his extensive clinical practice, Dr. Dowe recently took part in a clinical review of Cardiac CTA images created using the SnapShot Freeze option on the Discovery CT750 HD.

Evidence has shown that as heart rates rise, the motion present in the coronary artery can leave images from even the fastest CT scanners with motion-blurring artifacts. Above 75 BPM, coronary motion can be as much as 40mm/sec; equivalent to 3mm of travel in a 75ms acquisition.



Motion correction of RCA and small obtuse marginal

SnapShot Freeze corrected images

Any patient with an increased heart rate, like emergency cases, can benefit from the fast, non-invasive results of Cardiac CT. Gaining optimal heart rate control prior to these exams is not always possible. SnapShot Freeze intelligent motion correction can help.

Patient history

54-year-old white male; no family history of CAD; high blood pressure and high cholesterol; unexplained, sub-sternal chest pain for one year; with equivocal stress test results; anxiety is likely cause of elevated heart rate.

GE Healthcare
3000 N. Grandview Blvd.
Waukesha, WI 53188
U.S.A.

www.gehealthcare.com

Case description

Scanner:	Discovery CT750 HD
Scan type:	SnapShot Freeze
BMI:	36
HR:	72-77 BPM
Total exam time:	5.1 sec
Recon kernel:	Detail
kVp:	120
SFOV:	36
ASiR**:	20%
Type of contrast:	Isovue 370 (Ioversol)
Contrast injection rate:	6 ml/s
Total contrast amount:	90 cc

There was no dose increase as a result of using SnapShot Freeze for this patient, as adequate padding was already prescribed due to higher patient heart rate and variability.

Results

The scan showed mild coronary artery disease in the LAD with no stenosis. No other disease was found.

Dr. Dowe's comments

I was able to clear the LAD in the original image. However, viewing the same image with the motion correction from SnapShot Freeze gave me greater confidence that the RCA was indeed normal.

SnapShot Freeze greatly improves the RCA, and the visualization of smaller vessels such as the small obtuse marginal shown in these attached images. I believe SnapShot Freeze is going to have great utility in the high-heart-rate setting, and dramatically decrease the number of incomplete exams.

**In clinical practice, the use of ASiR may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

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imagination at work