

AVOIDING AVOIDABLE CARE

APRIL 25-26, 2012 | CAMBRIDGE, MA

Cardiology Case: Red Room

Chronology

May 2009

69 yo male lawyer complaining of exertional leg pain dx'd as PAD Rx'd: regular exercise & diet. Able to walk 18 holes, free of chest pain or SOB

January 2010

URI, found in AF with CHF. A nuclear stress test(#1) and an echocardiogram(#1) were performed. Cardiac catheterization (#1) advised.

May 2010

Cath (#1) revealed multivessel disease; he was advised to undergo CABG surgery. Wife, cardiologist, urged surgery be deferred.

Cardiac nuclear scan (#2) recommended to "assess viability of myocardium."

January 2011

Suffered another URI with symptoms of CHF

March 2011

Nuclear scan (#3)

Cardiac catheterization (#2) advised

Rationale: to evaluate etiology of CHF

Test Results

Nuclear scan (#1): EF impaired at 23% with global hypokinesis: non-ischemic cardiomyopathy possibly due to the viral process and a rapid heart rate in AF.

Cath (#1):

LM normal.

LAD: Mid 60-70% eccentric stenosis

Diagonal 1: prox 80%

LCx: nl, Obtuse Marginal 1: 95% prox stenosis

RCA: hazy prox 60-70%, with distal total occlusion with L-to-R collaterals

Normal R and L heart pressures

Nuclear scan (#2): EF improved to 49% with "some viable muscle in inferolateral wall"

Echocardiogram (#2): EF 35-40%

Nuclear scan (#3): EF = 51% No change in blood flow pattern.

Cath (#2) results: EF = 35%, no change in coronary anatomy

Chronology

April 2011

Exercise tolerance returns to normal, but again, cardiologist advises CABG surgery

Rationale: decompensated heart failure “perhaps” multifactorial with “viability of myocardium.”

May 2011

Referral to Lown Cardiovascular Group for second opinion re: need for CABG surgery

Recommendations:

- 1) No indication for CABG surgery in view of lack of angina with improved ejection fraction.
- 2) Future exercise testing with warm-up to clear claudication

March 2012

Echo (#4) and nuclear test (#4) performed



Test Results

Echo (#4): EF = 50%, no wall motion abnormalities

Nuclear test (#4): Bruce protocol duration = 14 min.
No ischemia.

Applying AUC to our Patient

JACC Vol. 53, No. 6, 2009
February 10, 2009:530-53

Patel *et al.* 539
Appropriateness Criteria for Coronary Revascularization

Table 2. Continued

Indication	Appropriateness Score (1-9)		
	CCS Angina Class		
	Asymptomatic	I or II	III or IV
42. <ul style="list-style-type: none"> • Three-vessel CAD (no left main) • Intermediate-risk findings on noninvasive testing • Receiving no or minimal anti-ischemic medical therapy 	A ₍₇₎	A ₍₇₎	A ₍₈₎
43. <ul style="list-style-type: none"> • Three-vessel CAD (no left main) • Intermediate risk findings on noninvasive testing • Receiving a course of maximal anti-ischemic medical therapy 	A ₍₇₎	A ₍₈₎	A ₍₉₎

This patient is a 69yo lawyer who eventually came to the Lowndes Cardiovascular Group for a 2nd opinion for CABG surgery after a long series of encounters with cardiologists and diagnostic tests, both invasive and non-invasive.

I will outline the pertinent history prior to his arrival for a 2nd opinion:

In **May '09**, he first presented to PCP in with exertional leg pain.

Dx'd as PAD with confirming vascular non-invasives.

He was advised to follow a regular exercise program and he did so energetically, and adopted a rigorous Ornish-style diet. Soon thereafter, he was able to walk 18 holes pulling his golf cart without limitation specifically free of chest pain or SOB.

In **January of 2010**, he developed a URI and was found to be in AF with a rapid ventricular response with symptoms of congestive failure. At that point, a nuclear stress test (#1) and an echocardiogram (#1) were performed. His EF was severely impaired at 23% by SPECT with severe global hypokinesis compatible with a non-ischemic cardiomyopathy possible due to the viral process and a rapid heart rate in AF. He was advised to undergo a cardiac catheterization, however, to clarify the etiology of his apparent cardiomyopathy.

In **May of 2010**, Cath (#1) revealed multivessel disease and he was advised to undergo CABG surgery.

His wife, a cardiologist, was not comfortable with this recommendation and urged that surgery be deferred.

His cardiologist then recommended another cardiac nuclear scan to "assess viability of myocardium."

The nuclear scan (#2) EF improved to 49% with “Some viable muscle in inferolateral wall”; An echocardiogram (#2) defined his EF at 35-40%.

No new recommendations were offered at that time.

In **January 2011** he suffered another URI with symptoms of congestive heart failure and in **March 2011**, after a modest diuresis and recovery, he was sent for nuclear scan(#3) His left ventricular EF was 51%.

Another catheterization was advised with the rationale of “ evaluating the etiology of the CHF”.

Cath #2 showed no change in anatomy with LVEF of 35%. He returned to his routine exercise without angina.

April 2011: again the cardiologist recommended CABG surgery. The rationale: a history of decompensated heart failure with “possible viable myocardium to be rescued.”

In May 2011, he was referred to Lown Cardiovascular Group for a 2nd opinion on the need for CABG surgery.

His physical exam and EKG were unremarkable. In view of stable symptoms and lack on angina, we found no indication for bypass surgery, but recommended that future stress testing be done after a warm up phase to clear his claudication and thus gain a more accurate gage of his exercise capacity.

Nearly one year later --**March 2012**, his echo (#4) shows an EF of 50% with no wall motion abnormalities. The nuclear exercise test (#4) shows a 14 min performance on a Bruce with no ischemia; EF 47%.

The long term data compiled at the LCG indicate a greater than 10 min performance on a Bruce protocol is associated with less than 1% per year cardiac mortality.

Among the questions raised by this case are:

1. The highly variable measure of Ejection Fraction is a puzzle – are our tests gospel?
2. This pt was never put on treadmill, so AUC criteria relied on imaging and coronary anatomy alone.
3. Do the AUC (see handout) provide any logical guidance since CABG surgery is deemed appropriate whether the patient is symptomatic or asymptomatic, treated or not treated with anti ischemic medications.
4. If the last stress test was done first, would some cardiologists still have sent an asymptomatic active man without angina to surgery or even to cath?
5. Did the coronary anatomy short-circuit the thought process?
6. If the pt wasn't married to a conservative cardiologist, would he have had the CABG?