

Adenosine Myocardial Perfusion SPECT

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Patient Name: Infarct, Example Referring Physician: Geoff Refman

Date of Study: **2010-01-01 Inpatient Rm: 0001** 8700 Beverly Blvd. NT LL A047

ID Number: 98700003 Acct#:1234567890123 Los Angeles, CA, 90048

Age: **67** Sex: **M** DOB:**1943-01-01** Fax (310) 555-2233 Phone (310) 555-1234

Reason: chest pain, coronary artery disease

Symptom: atypical chest pain

History: prior PTCA (1999), bypass surgery (1995)
Risk factors: hypercholesterolemia, hypertension

Medications: ACE inhibitor, aspirin, beta blockers, digoxin, diuretic, HMG CoA reductase inhibitor

Height: 70 in. Weight: 174 lbs. Body Mass Index (BMI): 25

Adenosine Stress ECG Results:

Protocol duration = 06:15 minutes; Rest HR 60; Peak HR 66

• Blood Pressure: Rest: 96/63; Stress: 91/51

Resting ECG: paced atrial rhythm

Stress ECG: no ST segment depression

Nuclear Results:

- Sestamibi (Same day) gated SPECT [stress/rest sestamibi (Prone and Supine)]
- Technical quality: excellent
- Myocardial Perfusion: Total perfusion defect 47% myocardium (0% reversible, 47% fixed)

Vessel Nonreversible

LAD large (anterior/septal/inferior/lateral/apical) LV enlargement: yes; Visual TID: no; TID Ratio 1.10

Myocardial Function:
 LVEF EDVi

Rest 32% 132 ml/ml2 Post Stress (104 min after) 26% 147 ml/ml2

Left ventricular wall motion demonstrated dyskinesis in the septal wall and akinesis in the anterior, inferior, lateral and apical walls.

Conclusion: Clinical Response Equivocal Perfusion Abnormal (Nonreversible)

ECG Response Nondiagnostic (Paced) Function Abnormal rest, no change after stress

These test results indicate a low (<10%) likelihood for the presence of jeopardized myocardium.

 LAD: a large nonreversible defect involving the anterior, septal, inferior, lateral and apical walls. The left ventricle is markedly enlarged and LV function is severely decreased.

Compared to the previous adenosine myocardial perfusion study of September 25, 2007, there has been no significant change in myocardial perfusion or function.

Sean WHayes

Sean Hayes, M.D.

Stress ECG monitored and interpreted by Geoff Refman

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SPECT: Myocardial Perfusion

Patient Name: Infarct, Example Referring Physician: Geoff Refman Date of Study: 2010-01-01 Inpatient Rm: 0001 8700 Beverly Blvd. **NT LL A047** ID Number: 98700003 Acct#:1234567890123 Los Angeles, CA, 90048 Sex: M DOB:1943-01-01 Fax (310) 555-2233 Phone (310) 555-1234 Age: 67 **Short Axis** Short Axis **Short Axis** Vertical Long Axis **Basal Level Apical Level** Mid-Ventricular Normal Anterior Antero Antero Septal Reversible 6 17 Apical Lateral Septal Infero Infero Septal 5 Nonreversible 10 Inferior Inferior SR SR SR SR 13. Anterior 4 4 7. Anterior 3 3 1. Anterior 00 0 =Normal 1 =Mildly reduced 8. AnteroSeptal 3 3 2. AnteroSeptal 2 2 Equivocal Moderately 14. Septal 9. InferoSeptal 2 2 3. InferoSeptal 17. Apical 4 4 00 4 4 Reduced
3 = Severely Reduced
4 = Absent Uptake 15. Inferior 4 4 10. Inferior 00 4. Inferior 0 0 11. InferoLateral 0 0 5. InferoLateral 0 0 S = Stress R = Rest 16. Lateral 4 4 12. AnteroLateral 6. AnteroLateral \cap ln

Date of study	Results	%Total defects	%Reversible	%Fixed	Stress Type
2010-01-01	Abnormal	47%	0%	47%	Adenosine
2007-09-25	Abnormal	47%	0%	47%	Adenosine

Adenosine (55.3 mg IV) (same day protocol) gated myocardial perfusion SPECT using Tc-99m sestamibi (35.7 mCi IV) at stress and (8.0 mCi IV) at rest was performed using the rest/stress sequence. Sestamibi SPECT was performed in the supine and prone positions.

Findings:

Vessel Nonreversible

LAD large (anterior/septal/inferior/lateral/apical)

Myocardial perfusion test result: definitely abnormal with nonreversible defect.

Sean WHayes

Stress Images

Rest Images

Sean Hayes, M.D.

%Myocardium		%Reversible		%Fixed		Vessel Descriptions
Normal/Equivocal	0-4%	Normal	0-2%	Normal/Equivocal	0-4%	RCA (Right Coronary Artery)
Mild	5-9%	Mild	3-5%	Mild	5-9%	LAD (Left Anterior Descending)
Moderate	10-14%	Moderate	6-9%	Moderate	10-14%	LCX (Left Circumflex)
Severe	>14%	Severe	>10%	Severe	>14%	DIAG (Diagonal)



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SPECT: Ventricular Function

Patient Name: Infarct, Example Referring Physician: Geoff Refman

Date of Study: 2010-01-01 Inpatient Rm: 0001

8700 Beverly Blvd. NT LL A047

ID Number: 98700

98700003 Acct#:1234567890123

Los Angeles, CA, 90048

Age: **67** Sex: **M** DOB:**1943-01-01** Fax (310) 555-2233 Phone (310) 555-1234

Short Axis Apical Level				Short Axis Mid-Ventricular		Short Axis Basal Level			Vertical Long	Α	xis			
Aplical Level Anterior Septal 14 16 Lateral Inferior			Anterior Antero Septal Antero Septal Antero 12 Lateral Infero Septal Inferior			Basal Level			17 Apical		Moderate / Severe Hypokinesis Akinesis Dyskinesis			
	S	R			S	R		S	R			S	R	
13. Anterior	4	4	П	7. Anterior	3	3	1. Anterior	0	0					0 =Normal 1 =Mild Hypokinesis
				8. AnteroSeptal		5	2. AnteroSeptal		3					2 = Moderate Hypokinesis
		3. InferoSeptal		3		17. Apical	4	4	3 = Severe Hypokinesis					
15. Inferior	4	4				4. Inferior	2	2					4 = Akinesis	
				11. InferoLateral	2	2	5. InferoLateral	0	0					5 = Dyskinesis
16. Lateral	4	4		12. AnteroLateral	2	2	6. AnteroLateral	0	0					S = Stress R = Rest

Rest							
Date of study	EF	EDV	EDVi	EF	EDV	EDVi	TID ratio
2010-01-01	32%	260 ml	132 ml/m2	26%	290 ml	147 ml/m2	1.10
2007-09-25	28%	310 ml	160 ml/m2	24%	296 ml	153 ml/m2	0.94

Left ventricular wall motion demonstrated dyskinesis in the septal wall and akinesis in the anterior, inferior, lateral and apical walls.

Wall motion results: definitely abnormal; abnormal rest, no change after stress

Sean WHayes

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	Men	Women
Normal EF (mean - 2sd)	>42%	>50%
Severely Reduced EF	<30%	<35%
Normal EDV (mean + 2sd)	<150 ml	<103 ml
Normal EDVi (mean + 2sd)	<76 ml/m2	<61 ml/m2

Sharir et al., J. Nucl Cardiol 2006;13:495-506

EF	Ejection Fraction
EDV	End Diastolic Volume
EDVi	End Diastolic Volume index
TID	Transient Ischemic Dilation

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Adenosine Stress Electrocardiography

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A total of 55.3 mg of Adenosine was infused. A standard 12 LEAD ELECTROCARDIOGRAM was recorded in the supine position with continuous ECG monitoring throughout infusion and recovery. Additionally, 12 LEAD

ELECTROCARDIOGRAMS were recorded every minute.

Adenosine Physiology

Resting Hemodynamics	Heart Rate: 60	Blood Pressure: 96/63
Arrhythmia	None	

	Stress								Recovery		
Minutes	HR	BP	MPH	Grade	METS	Comments	HR	BP	Comments		
1	60						60				
2	60	123/62				chest discomfort	60	88/54	symptoms resolved		
3	60						60				
4	63	91/51					60	102/52			
5	66						60				

Electrocardiogram

Rest	paced atrial rhythm
Stress	
V5	Maximum Abnormality: None
AVF	Maximum Abnormality: None

Date of study	Stress	Duration	Peak HR	Clinical	ECG
2010-01-01	Adenosine	06:15	66(43 %)	Equivocal	Nondiagnostic (Paced)
2007-09-25	Adenosine		98(63 %)	Nondiagnostic	Nondiagnostic (Paced)

Impression

Clinical response to Adenosine: Equivocal with chest discomfort ECG response to Adenosine: Nondiagnostic due to Paced Rhythm Stress ECG monitored and interpreted by Geoff Refman

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