

Adenosine Myocardial Perfusion SPECT

Patient Name: Mixed, Example Referring Physician: Geoff Refman

Date of Study: **2010-01-01 Outpatient** 8700 Beverly Blvd. NT LL A047

ID Number: 98700001 Acct#:11112222233333 Los Angeles, CA, 90048

Age: **62** Sex: **F** DOB:**1948-01-01** Fax (310) 555-2233 Phone (310) 555-1234

Reason: coronary artery disease, shortness of breath

Symptom: shortness of breath

- History: prior myocardial infarction (12/7/1999), angiogram (5/2009), stent of the right coronary artery (5/2009)
 Cath at Glendale Mem. Hosp in 2009: RCA stented, LAD 100%
- Risk factors: hypercholesterolemia, diabetes, family history of coronary disease
- Medications: beta blockers, oral diabetic agent, Plavix
- Height: 66 in. Weight: 188 lbs. Body Mass Index (BMI): 30.3

Adenosine Stress ECG Results:

Type: Walking Adenosine

Protocol duration = 07:30 minutes; Rest HR 77; Peak HR 123

• Blood Pressure: Rest: 153/90; Stress: 124/80

Resting ECG: Low voltage QRS

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 24% myocardium (14% reversible, 10% fixed)

Vessel Reversible Nonreversible

LAD large (anterior/septal/inferior) small to medium (lateral/apical)

LV enlargement: no; Visual TID: no; TID Ratio 1.25

Myocardial Function:
 LVEF
 EDVi

Rest 44% 48 ml/ml2
Post Stress (63 min after) 40% 48 ml/ml2

Left ventricular wall motion demonstrated akinesis in the apical wall and moderate hypokinesis in the anterior,

septal, inferior and lateral walls.

Conclusion: Clinical Response Nondiagnostic **Perfusion** Abnormal (Reversible and Nonreversible)

ECG Response Nonischemic Function Abnormal rest, no change after stress

These test results indicate a high (>90%) likelihood for the presence of jeopardized myocardium.

• LAD: a small to medium sized nonreversible defect involving the lateral and apical walls, with an adjacent large severe reversible defect in the anterior, septal and inferior walls.

The severity of the anterior and inferior perfusion defects suggests that the LAD stenosis is critical (>90%).

The results were discussed with Dr.Refman

Sean Hayes, M.D.

Sean WHayes

Stress ECG monitored and interpreted by Geoff Refman

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S. MARK TAPER FOUNDATION IMAGING CENTER

SPECT: Myocardial Perfusion

Patient Name: Mixed, Example Referring Physician: Geoff Refman Date of Study: 2010-01-01 Outpatient 8700 Beverly Blvd. **NT LL A047** ID Number: 98700001 Acct#:1111222233333 Los Angeles, CA, 90048 Age: 62 Sex: F DOB:1948-01-01 Fax (310) 555-2233 Phone (310) 555-1234 **Short Axis** Short Axis **Short Axis** Vertical Long Axis Apical Level Mid-Ventricular Basal Level Normal Anterior Antero Antero Septal Lateral 6 Reversible 17 Septal Lateral Apical Infero Infero 3 Septa l ateral Nonreversible 10 Inferior Inferior SR SR SR 13. Anterior 7. Anterior 20 3 1 1. Anterior 00 0 = Normal=Mildly reduced Equivocal =Moderately 8. AnteroSeptal 2. AnteroSeptal 0 0 0 0 9. InferoSeptal 00 3. InferoSeptal 17. Apical 14. Septal 2 1 00 3 2 Reduced
3 = Severely Reduced
4 = Absent Uptake 15. Inferior 10. Inferior 4. Inferior 3 1 nlo 00 11. InferoLateral 00 5. InferoLateral 0 0 S = Stress R = Rest $3 \mid 2$ 16. Lateral 12. AnteroLateral 00 6. AnteroLateral 0 0 Stress Images Rest Images

Date of study	Results	%Total defects	%Reversible	%Fixed	Stress Type
2010-01-01	Abnormal	24%	14%	10%	Adenosine

Adenosine (60.2 mg IV) (same day protocol) gated myocardial perfusion SPECT using Tc-99m sestamibi (35.4 mCi IV) at stress and (8.5 mCi IV) at rest was performed using the rest/stress sequence. Sestamibi SPECT was performed in the supine and prone positions.

Findings:

Vessel Reversible Nonreversible

.AD large (anterior/septal/inferior) small to medium (lateral/apical)

Myocardial perfusion test result: definitely abnormal with both reversible and nonreversible defects.

Sean WHayes

Sean Haves, 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: Mixed, Example Referring Physician: Geoff Refman

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NT LL A047 Los Angeles, CA, 90048

Age: **62** Sex: **F** DOB:**1948-01-01**

Fax (310) 555-2233 Phone (310) 555-1234

Short Axis Apical Level Anterior Septal 14 16 Lateral	Short Axis Mid-Ventricular Anterior Antero Septal 8 7 12 Antero Lateral Infero Septal 10 Inferior	Short Axis Basal Level	Vertical Long Axis Apical	Normal Moderate / Severe Hypokinesis Akinesis Dyskinesis
S R	S R	S R	S R	1
13. Anterior 2 2	7. Anterior 0 0	1. Anterior 0 0		0 =Normal 1 =Mild Hypokinesis
	8. AnteroSeptal 0 0	2. AnteroSeptal 0 0		2 =Moderate Hypokinesis
14. Septal 2 2	9. InferoSeptal 0 0	3. InferoSeptal 0 0	17. Apical 4 4	3 = Severe Hypokinesis
15. Inferior 2 2	10. Inferior 0 0	4. Inferior 0 0		4 = Akinesis
	11. InferoLateral 0 0	5. InferoLateral 0 0		5 =Dyskinesis
16. Lateral 2 2	12. AnteroLateral 0 0	6. AnteroLateral 0 0		S = Stress R = Rest

 Date of study
 EF
 EDV
 EDVi
 EF
 EDV
 EDVi
 EF
 EDV
 EDVi
 TID ratio

 2010-01-01
 44%
 93 ml
 48 ml/m2
 40%
 94 ml
 48 ml/m2
 1.25

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

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

Sean Hayes, M.D.

	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;13:495-50				

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 60.2 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

ID Number:

	3,	
Resting Hemodynamics	Heart Rate: 77	Blood Pressure: 153/90
Arrhythmia	None	

Stress							Re	covery	
Minutes	HR	BP	MPH	Grade	METS	Comments	HR	BP	Comments
1	98					flush, chest pain, dyspnea	101		
2	112	136/84					85	164/87	
3	121						75		symptoms resolved
4	123	124/80				moderate chest pain	83	169/95	pt instructed to resume BP meds
5	118						73		

Electrocardiogram

Rest	Low voltage QRS
Stress	
V5	Maximum Abnormality: None
AVF	Maximum Abnormality: None

Date of study	Stress	Duration	Peak HR	Clinical	ECG
2010-01-01	Adenosine	07:30	123(78 %)	Nondiagnostic	Nonischemic

Impression

Clinical response to Adenosine: Nondiagnostic with chest discomfort

ECG response to Adenosine: Nonischemic

Stress ECG monitored and interpreted by Geoff Refman

Sean Hayes, M.D.

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