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POLYVINYL CHLORIDE STUDY

Reason for consultation: 44 year old white male exposed to polyvinyl chloride.

PRESENT ILLNESS:

, 44 year old male, with B.F. Goodrich for 22 years, has been exposed to polyvinyl chloride, "minimal amount". By way of cardiovascular assessment the patient claims to be totally asymptomatic, denies specifically hypertension, diabetes, heart enlargement, cholesterol or triglyceride abnormalities. No shortness of breath, dyspnea, PND, orthopnea, edema, cyanosis, rheumatic heart disease, scarlet fever and no chest symptoms, palpitations, or chest pressure.

Personal history includes the smoking of cigarettes from the age of 16 to the age of 41. He stopped following that. Alcohol includes three beer/week; wine rare; whiskey once/month. Medications include Allopurinol 100 mg/day. Family history is negative for hypertension, diabetes, heart disease, and other dread diseases. Head, eyes, ears, nose and throat includes partial dentures and wearing of glasses. Respiratory negative. GI negative, GU negative, neuromuscular negative.

Cardiac physical examination: Blood pressure was 100/85, rate 70 lying; 110/85, rate 85 standing. Respirations 15. Head, eyes, ears, nose and throat were unremarkable. Negative funduscopic exam. Neck examination was within normal limits. The chest was clear to percussion and auscultation.

Cardiac exam revealed the PMI at the left midclavicular line, fifth interspace. The first and second heart sounds were normal, but no third or fourth heart sound, no murmur, rub or click. Abdominal exam was normal with no organomegaly. Neuromuscular exam was normal. Pulses were 2+ and equal in four extremities. The cardiovascular graphics included the following: Electrocardiogram revealed sinus bradycardia at a rate of 55. Holter shows areas of sinus tachycardia, sinus arrhythmia, 2 PVC's/24 hours. The chest x-ray was normal. The phonocardiogram was normal. Graded exercise test was non-diagnostic maximal test because of the non-specific ST abnormalities occurring 5 and 8 minutes after exercise. Echocardiogram showed prolapse of the posterior mitral valve.

Discussion and Assessment:

This patient is totally asymptomatic with a long history of smoking. His abnormalities were demonstrated on the graphics including some premature beats, some non-specific ST changes on exercise test and evidence of Barlow's with posterior mitral valve prolapse on echo.

ETIOLOGIC DIAGNOSIS: 1) Exposure to toxic agent, polyvinyl chloride.

ANATOMIC DIAGNOSIS: 1) Possible arteriosclerosis of the coronary arteries because of some ST abnormalities on the graded exercise test although not diagnostic.

PHYSIOLOGIC DIAGNOSIS: 1) Sinus rhythm, occasional premature atrial, occasional premature ventricular beats. Disturbance in calcium

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function with prolapse of the mitral valve.

CARDIAC STATUS: Probably unknown, but not compromised.

PROGNOSIS: Good.

Julien MD

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UNIVERSITY OF LOUISVILLE
Cardiac Function Laboratory
Treadmill Exercise Tolerance Test-Modified Bruce

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Number	Name: (last, first, middle initial)	Date of Test		
		3	17	77

Age: 44 Sex: M Ht: 6' 1½" Wt: 222½ AHA Classification _____

Diagnosis: Routine

Medications: Alpernaul

Protocol: Three minutes walking at each indicated level with blood pressure, heart rate and ventilation as recorded.

	Speed mph	Grade %	Heart Pressure	Heart Rate
CONTROL (Supine)			100/85	69
CONTROL (Standing)			110/85	85
I	1.0	5	140/80	91
II	1.7	10	180/80	108
III	2.5	10	150/80	114
IV	3.4	14	140/80	136
V	4.2	16	160/85	158
VI	5.0	18		
VII	5.5	20		
VIII	6.0	22		

Predicted 85% Rate:
Maximal Heart Rate: 180
Submaximal Heart Rate: 153

Blood Pressure and Pulse Recovery (Supine)

Immediately after	187	2 minutes after	116	5 minutes after	108	8 minutes after	105
	140/80		150/70		130/70		110/60

Patient Attained Cutoff Point of: HR 180, HR 200, Syst. BP 240, Diast. BP 140

Significant fall in Blood Pressure, subjective distress, other,

at the end of 2' 50" minutes of Stage VI

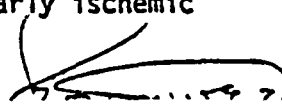
Treadmill duration score (TDS) 17 minutes. 50"

REMARKS:

Baseline - Normal
Monitor - Normal
Immed. no ST decrease
2, no ST depression
5-8 nonspecific ST abnormality 5/8" post.

Impression: Maximal Test
Nondiagnostic because of NAST/T not clearly ischemic

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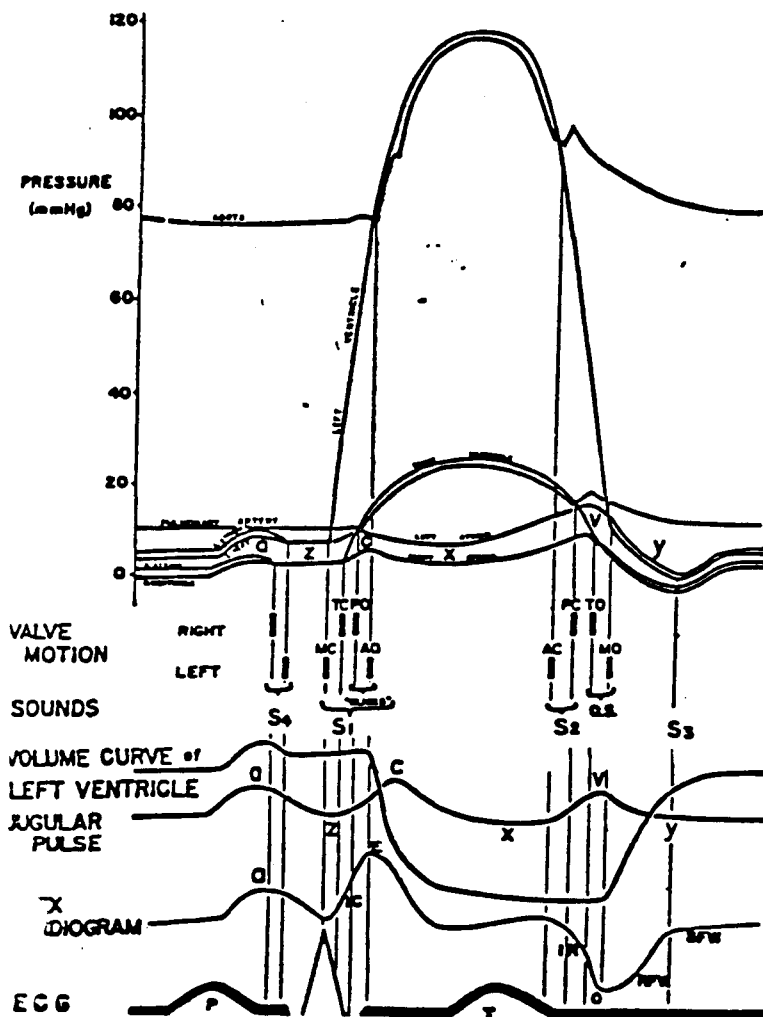
SECTION OF CARDIOLOGY
UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE
Graphics Laboratory

NAME _____ DATE 3-17-77 HOSP. LOC. _____
AGE: 44 MEDS. _____ CLINICAL DX. _____
HOSP. NO. _____ NYHA CLASS _____ REF. PHYS. _____
Interpretations: (ACG, PCG, JVP, CPT)
PCG - ?

Impression:

[Signature]

M.D.



Normal Range	Intervals	Patient
Heart Rate 60-100/m.		84
PR 0.12-0.20 sec.		.16
A ₂ P ₂ 0.01-0.04		.04
	<0.06 (severe)	
A ₂ OS	>0.09 (mild)	
Q-1 0.03-0.07		.03
A ₂ -S ₃ 0.10-0.20		-
Ejection Time 0.28-0.34		.26
U. Time 0.05-0.11		.11
† Time 0.02-0.04		.05

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Name _____ Age 44 Sex M Room # _____ Hosp. # _____
 Diagnosis: _____ Ht. _____ Wt. _____ B. S. A. _____
 Referred by Dr. _____ Date _____

	NORMAL RANGE	TEST RESULTS
RVD	0.7 - 2.4	
RVD INDEX	0.3 - 1.1	
LVID	3.7 - 5.4	
LVID/M ²	2.27 - 3.03	
Posterior wall thickness	0.8 - 1.1	
Septal wall thickness	0.7 - 1.2	
LAID	1.9 - 3.8	
Aortic outflow	2.0 - 3.7	
Aortic valve dimension	1.6 - 2.6	
Pericardial effusion?		
Mitral valve velocity D.C.R.	80 mm/sec. - 150 mm/sec. over 20 mm or 2.0 cm	
Mitral valve excursion		

- 1) Data insufficient to interpret
- 2) Consistent recording of mitral valve prolapse

ЗАПИСЬ №.

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HOLTER MONITOR
CARDIOVASCULAR GRAPHICS LABORATORY
UNIVERSITY OF LOUISVILLE

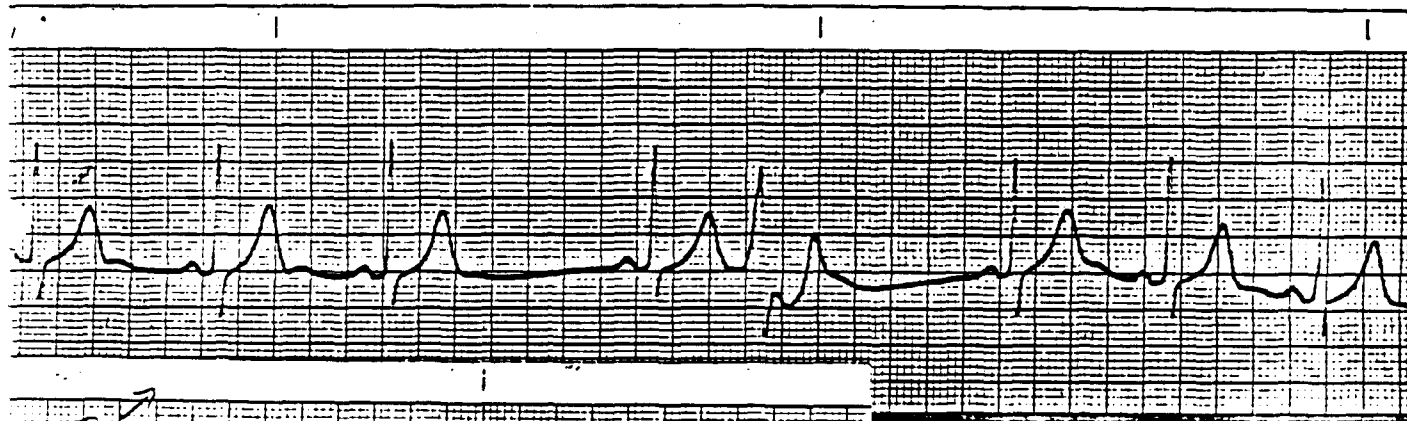
NAME _____ HOSP. NO. _____ DATE 3/17-18/77

REFERRED BY B. F. Goodrich DIAGNOSIS Routine

MEDICATIONS Alpernaul

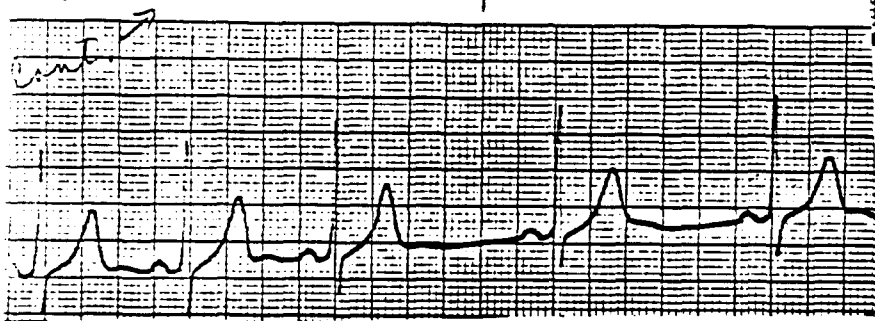
INTERPRETATION: Rate Rhythm ST T

Sinus tachycardia
Sinus arrhythmia
Two Premature Ventricular Contractions



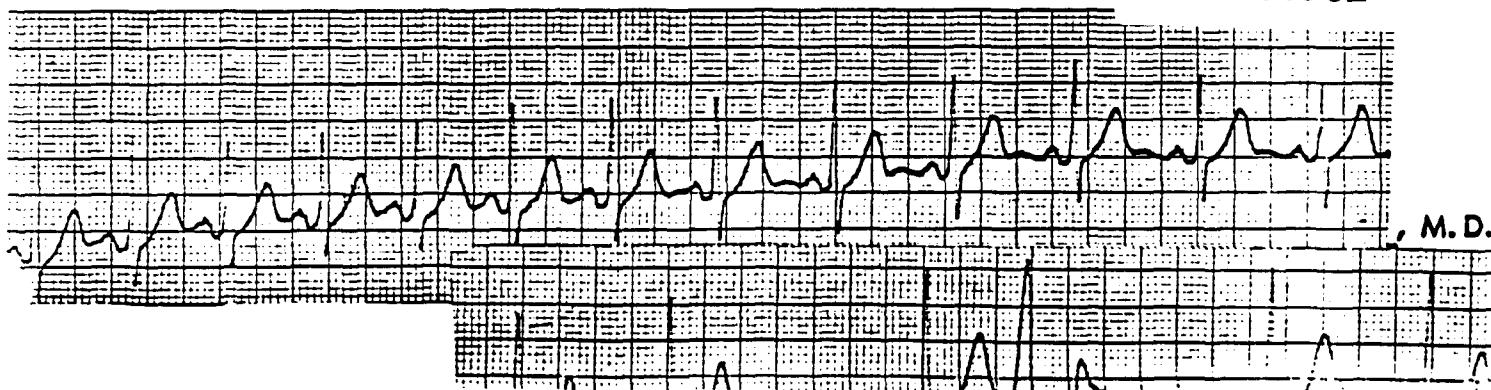
PARKE-DAVIS

44-1040-001



Continued

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M. D.

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(BASELINE ECG)

ECG FORMS - LGH

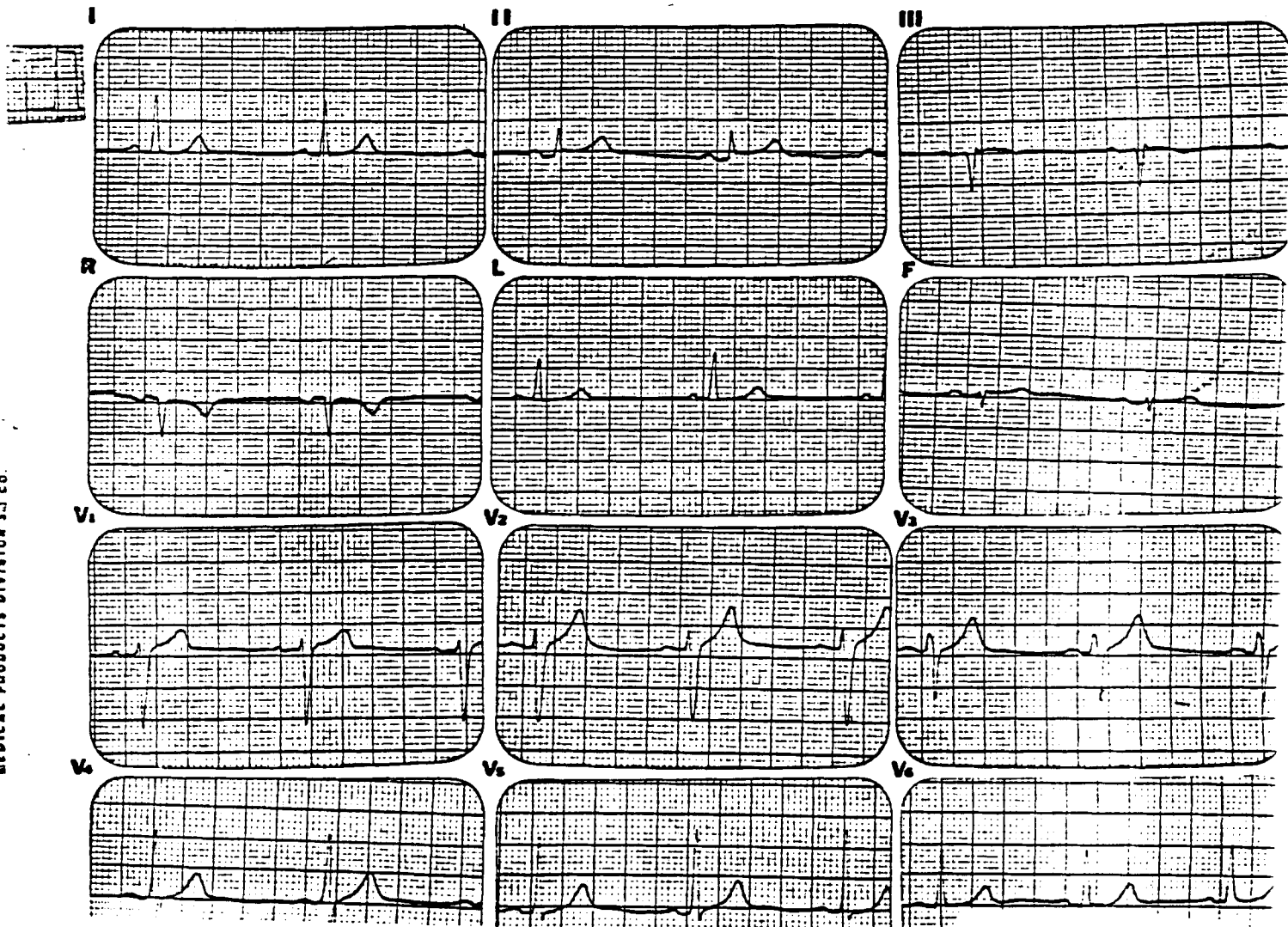
NAME: _____ ECG NO.: _____ AGE: 44
 HOSP. NO.: _____ WARD OR CLINIC: _____ DATE: 3/17/77
 Medications: Digitalis Yes No X Procainamide Yes No X Quinidine Yes No X Beta Blocker Yes No X
 Description:
 Rhythm sinus PR Interval .18 sec. QRS Axis 30+ °
 Rate-atrial 55 /min. QRS Duration .07 sec.
 Rate-vent. 55 /min. QT Interval .40 sec.

Interpretation:

Sinus bradycardia

Normal

Latimer MD.



MEDICAL PRODUCTS DIVISION 3M CO.

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