

POCUS CONFERENCE

Marvah Hill Pierre-Louis
PGY2

CC: weakness and low blood pressure

88 year old female

wild-type transthyretin (wtATTR) cardiac amyloid

heart failure (EF 32%)

coronary artery disease s/p drug eluting stent

atrial fibrillation with left atrial appendage thrombus

Home Medications

Bumex 4mg BID

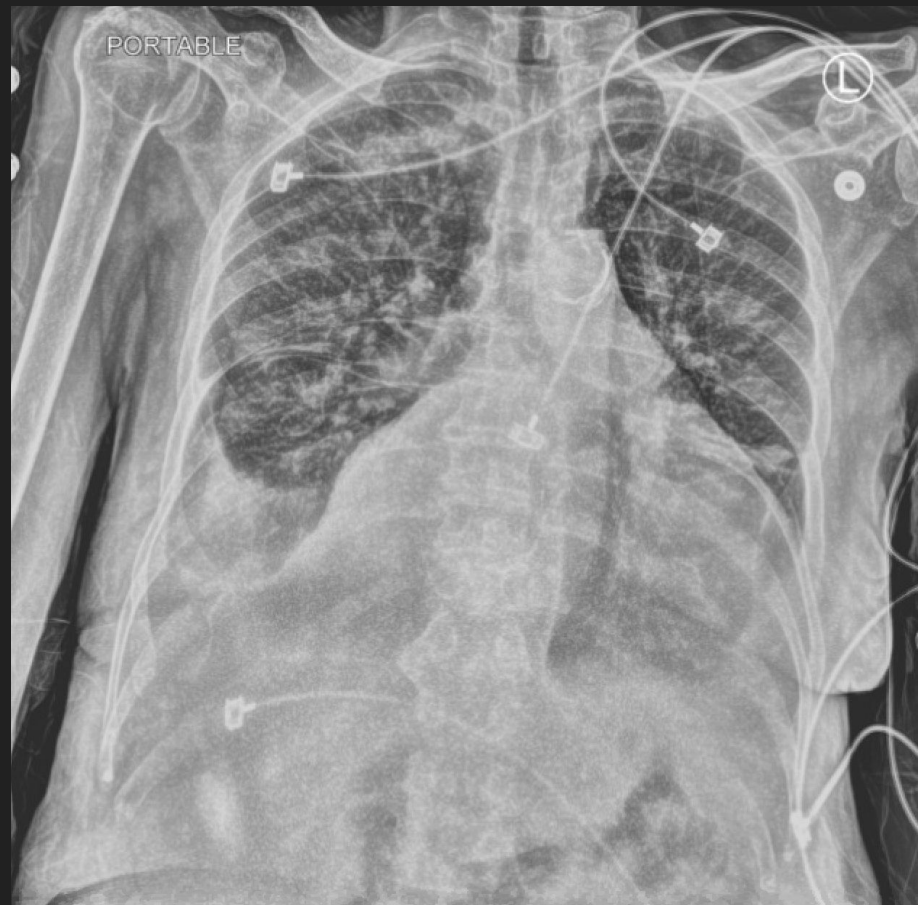
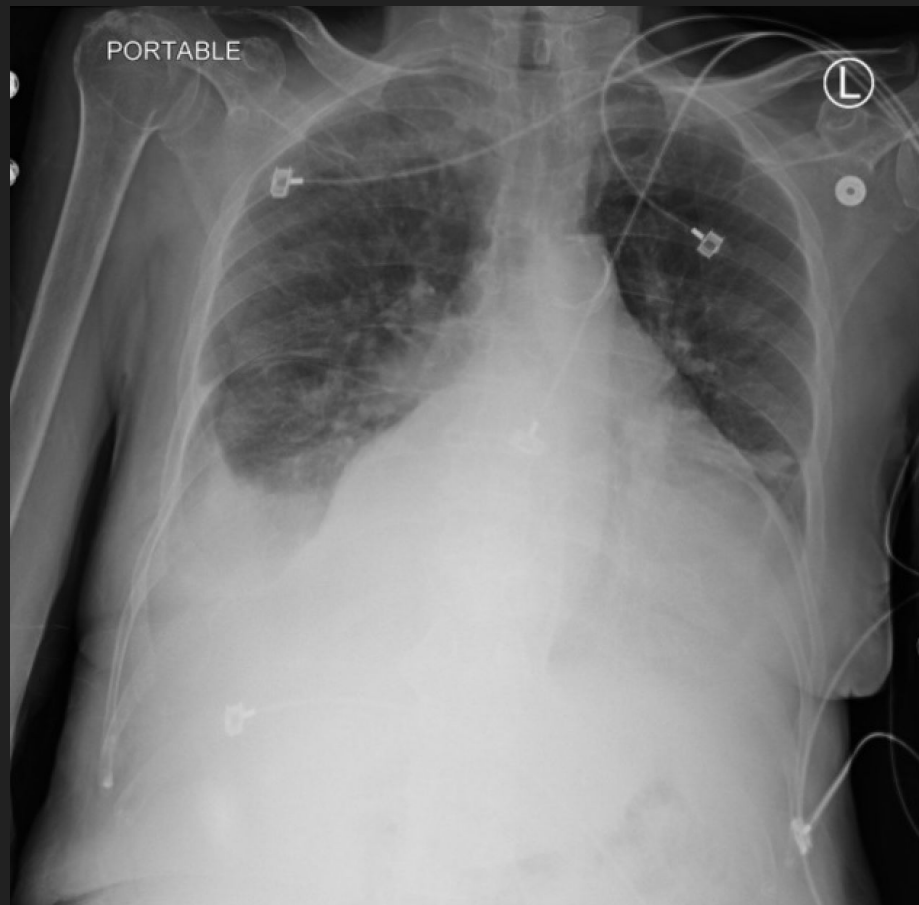
Metoprol XL 75

Spirolactone 25

Apixaban 2.5 BID

Atorvastatin 10

T 36.4 BP 89/58 HR66 RR16
SpO2 100%





0
5
10
15



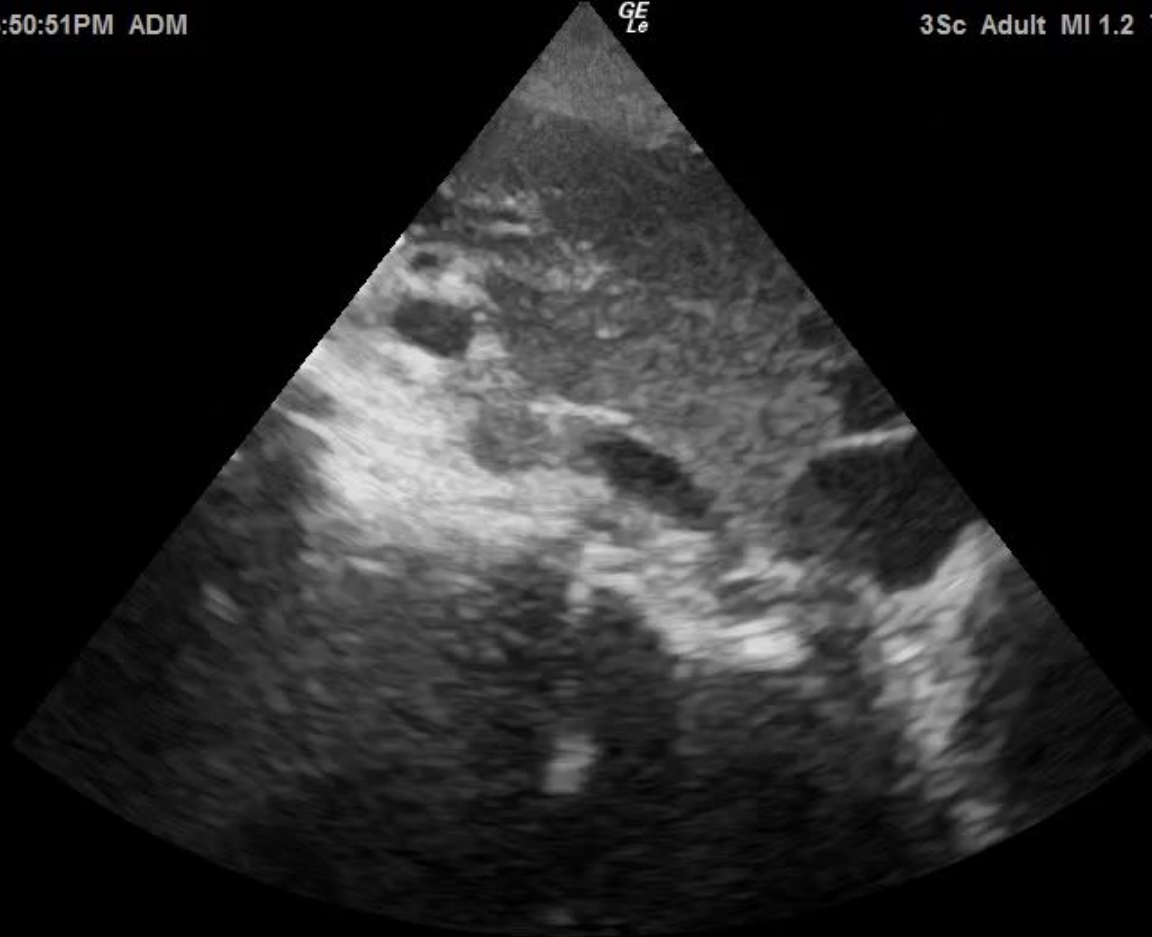












5

10

Hospital Course



Fibrocalcific changes of aortic valve with normal opening

Severely dilated left and right atrium

Severe left ventricular hypertrophy; diffuse hypokinesis. EF 25%

Abnormal left ventricular relaxation

Normal right ventricular size. Severely reduced function

IVC normal in size but no respiratory variability

No pericardial effusion. Bilateral pleural effusions

What are echocardiographic prognosticating findings of cardiac amyloid?

Echocardiographic Findings in Systemic Amyloidosis: Spectrum of Cardiac Involvement and Relation to Survival

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Table 1. Primary Systemic Amyloidosis: Echocardiographic and Clinical Variables in Four Subgroups

	Group I MVWT ≤12	Group II 12< MVWT <15	Group III MVWT ≥15	Group IV Atypical	Total
Number	34	23	68	7	132
Age (yr) (mean ± SD)	62.2 ± 11.1	61.4 ± 11.4	62.6 ± 7.7	65.9 ± 8.7	62.5 ± 9.4
Male	15(44%)	14(61%)	50(74%)	6(86%)	85(64%)
CHF	8(24%)	12(52%)	52(80%)	3(43%)	75(58%)
FS (<30%)	0	8(35%)	48(71%)	7(100%)	63(48%)
LV enlargement (>55 mm)	0	0	0	5(71%)	5(4%)
GS	0	11(48%)	49(72%)	2(29%)	62(47%)
LAE	7(21%)	9(41%)	52(83%)	4(67%)	72(61%)
Normal echocardiogram	25(74%)	0(0%)	0(0%)	0(0%)	25(19%)
Deaths/patients followed up	14/29	15/21	43/59	5/7	77/115
Median actuarial survival (yr)	2.4	1.3	0.4	0.5	1.1

CHF = congestive heart failure; FS = fractional shortening; GS = granular sparkling appearance of myocardium; LAE = left atrial enlargement; LV = left ventricular; MVWT = mean ventricular wall thickness (in millimeters). Except for age, deaths and survival, the entries are number of patients and the percent in the group with the characteristic.

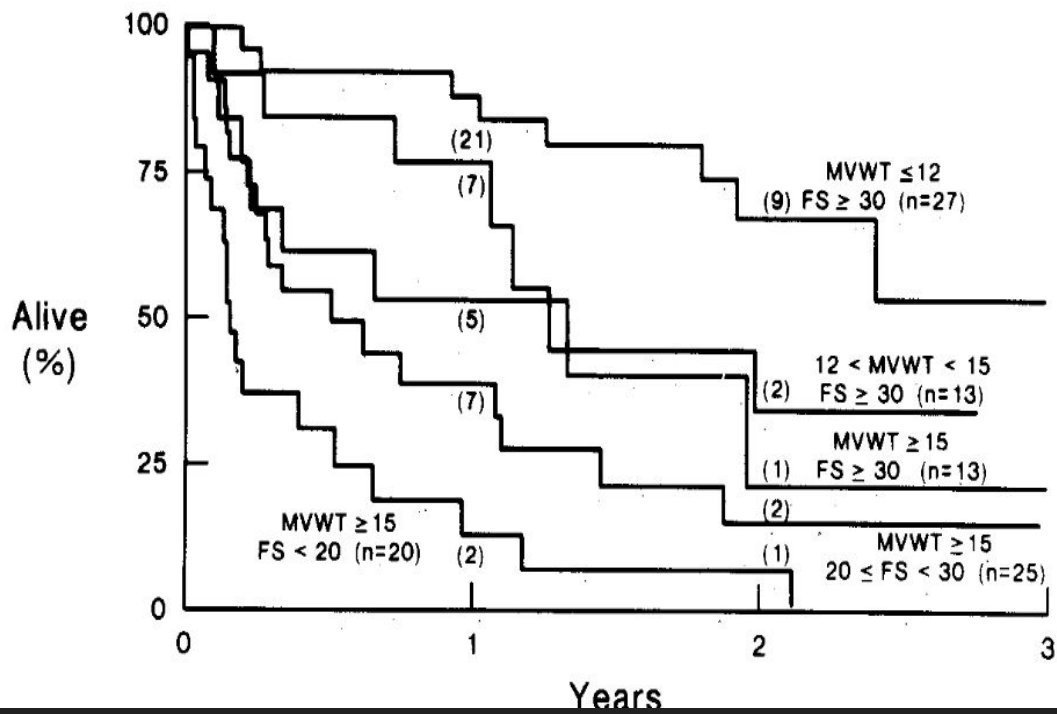


Figure 1. Survival of patients with various combinations of mean left ventricular wall thickness (MVWT) and fractional shortening (FS) from the time of echocardiographic examination. The **top three curves** show survival in patients with increasing wall thickness and normal fractional shortening. The **lower two curves** show survival of patients with moderate and severe reduction of fractional shortening.

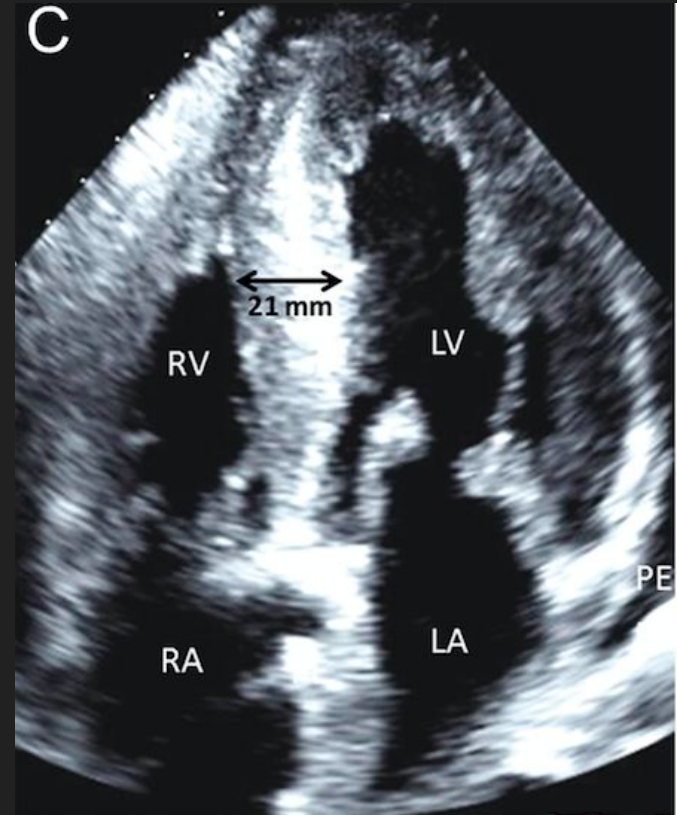
Congestive Heart Failure Induced by
Primary Systemic Amyloidosis
A Diagnostic Problem

Arranged by RAYMOND D. PRUITT, M.D., GUY W. DAUGHERTY, M.D., AND JESSE E. EDWARDS, M.D.

Circulation, Volume VIII, November, 1953

Brilliant speckled, speckled pattern, granular sparkling, greater echogenicity

“Fine granular elevations were found in the endocardium [...] Gross sections of the myocardium revealed translucent, gray speckled lesions...”



Sensitivity and Specificity of the Echocardiographic Features of Cardiac Amyloidosis

RODNEY H. FALK, MD, MRCP (UK), JONATHAN F. PLEHN, MD,
THOMAS DEERING, MD, EDGAR C. SCHICK, Jr., MD, PAUL BOINAY, MD,
ALAN RUBINOW, MD, MARTHA SKINNER, MD, and ALAN S. COHEN, MD

	Single short axis view	Complete echo
Sensitivity	63%	87%
Specificity	74%	81%
+LR	2.42	4.58
-LR	0.5	0.16

Left atrial size is an independent predictor of overall survival in patients with primary systemic amyloidosis

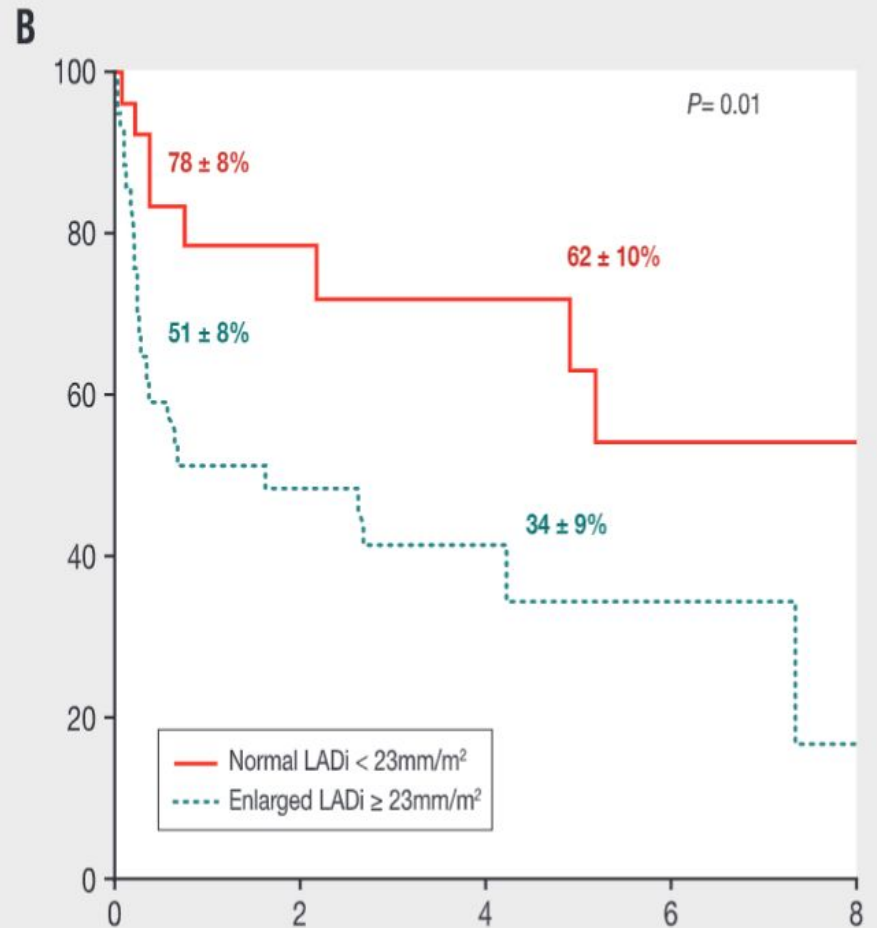
Dania Mohty^{a,*}, Philippe Pibarot^b, Jean G. Dumesnil^b,
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Dominique Bordessoule^c, Arnaud Jaccard^c

Table 3 Multivariable predictors of late overall survival.

Variables	Multivariable analysis	
	Hazard ratio [95% CI]	<i>P</i>
Age ^a (years)	1.04 [1.01–1.08]	0.01
Sex (female)	1.28 [0.93–1.78]	0.1
Creatinine ^a ($\mu\text{mol/L}$)	1.0023 [1.0008–1.0034]	0.04
Hypertension	—	NS
Atrial fibrillation	—	NS
IVST > 12 mm	1.31 [0.90–1.96]	0.1
LVEF < 50%	1.58 [1.09–2.27]	0.01
LA enlargement (LADi $\geq 23 \text{ mm/m}^2$)	2.47 [1.11–5.90]	0.02

CI: confidence interval; IVST: interventricular septal thickness; LA: left atrium; LADi: left atrial diameter indexed to body surface area; LVEF: left ventricular ejection fraction.

^a For variables expressed in continuous format, the hazard ratio (HR) represents the increase in mortality risk per 1-unit increase in the variable; for categorical variables, the HR represents the risk of mortality in the presence of the variables.



Ejection Fraction

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Independent Predictors of Survival in Primary Systemic (AL) Amyloidosis, Including Cardiac Biomarkers and Left Ventricular Strain Imaging: An Observational Cohort Study



Diego Bellavia MD, PhD, MS, Patricia A. Pellikka MD, Ghormallah B. Al-Zahrani MBBS, Theodore P. Abraham MD, Angela Dispenzieri MD, Chinami Miyazaki MD, Martha Lacy MD, Christopher G. Scott MS, Jae K. Oh MD and Fletcher A. Miller MD

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Pleural and Pericardial Effusion

Predictor	HR (95% CI)	P	Univariate C-statistic (95% CI)
Model A: clinical data and biomarkers *			
Age	1.04 (1.01-1.07)	.004	0.60 (0.52-0.67)
NYHA class III/IV	2.77 (1.53-5.01)	.001	0.60 (0.54-0.66)
Log BNP	1.34 (1.08-1.66)	.007	0.60 (0.51-0.69)
Model B: clinical data, biomarkers, and standard echocardiographic parameters †			
Age	1.05 (1.02-1.08)	.001	0.60 (0.52-0.67)
NYHA class III/IV	1.87 (0.98-3.55)	.06	0.60 (0.54-0.66)
Pleural effusion	2.07 (1.11-3.86)	.01	0.57 (0.52-0.63)
Log BNP	1.31 (1.06-1.62)	.02	0.60 (0.51-0.69)
Ejection time	0.99 (0.98-1.00)	.03	0.65 (0.58-0.73)

THANK YOU

