



Is this LV diastolic dysfunction?

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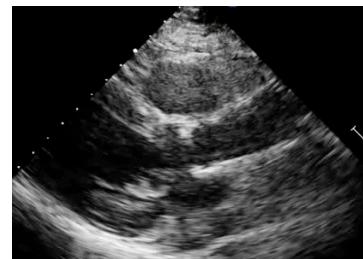
National Cerebral and Cardiovascular Center

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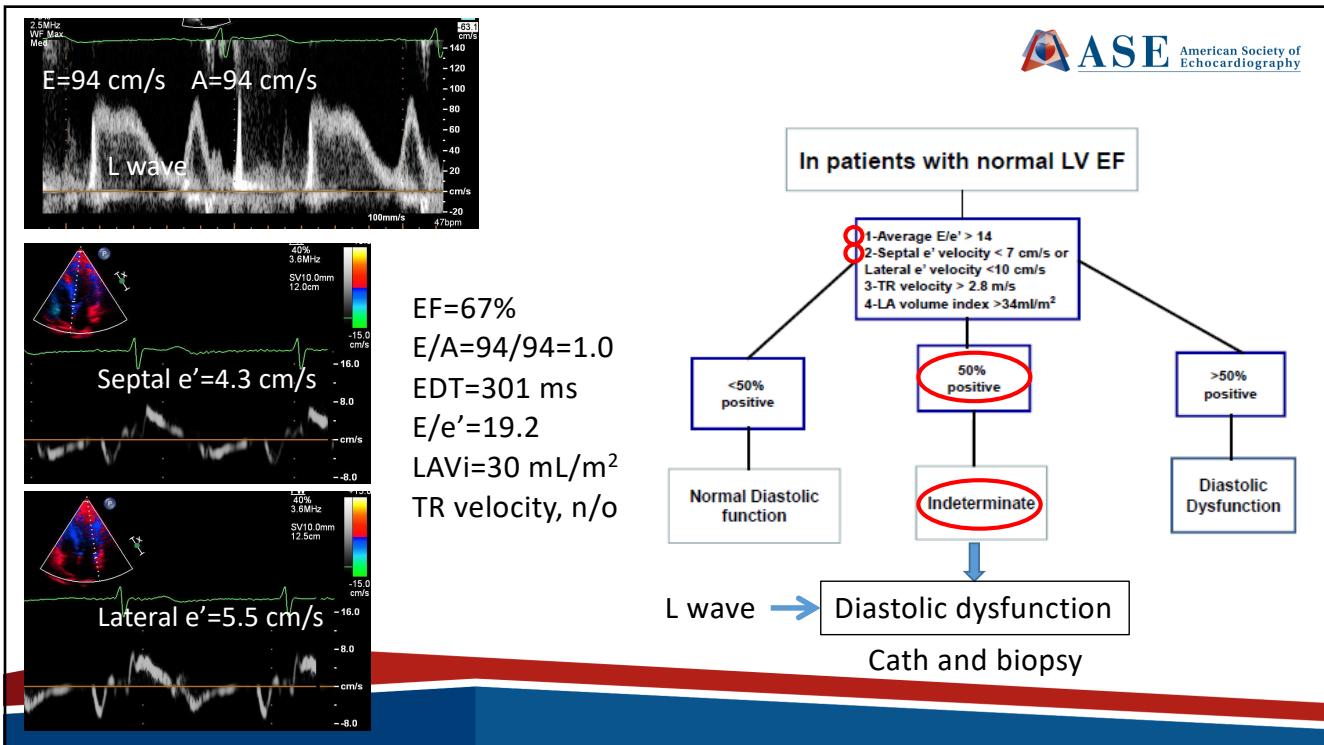
58 yo, male



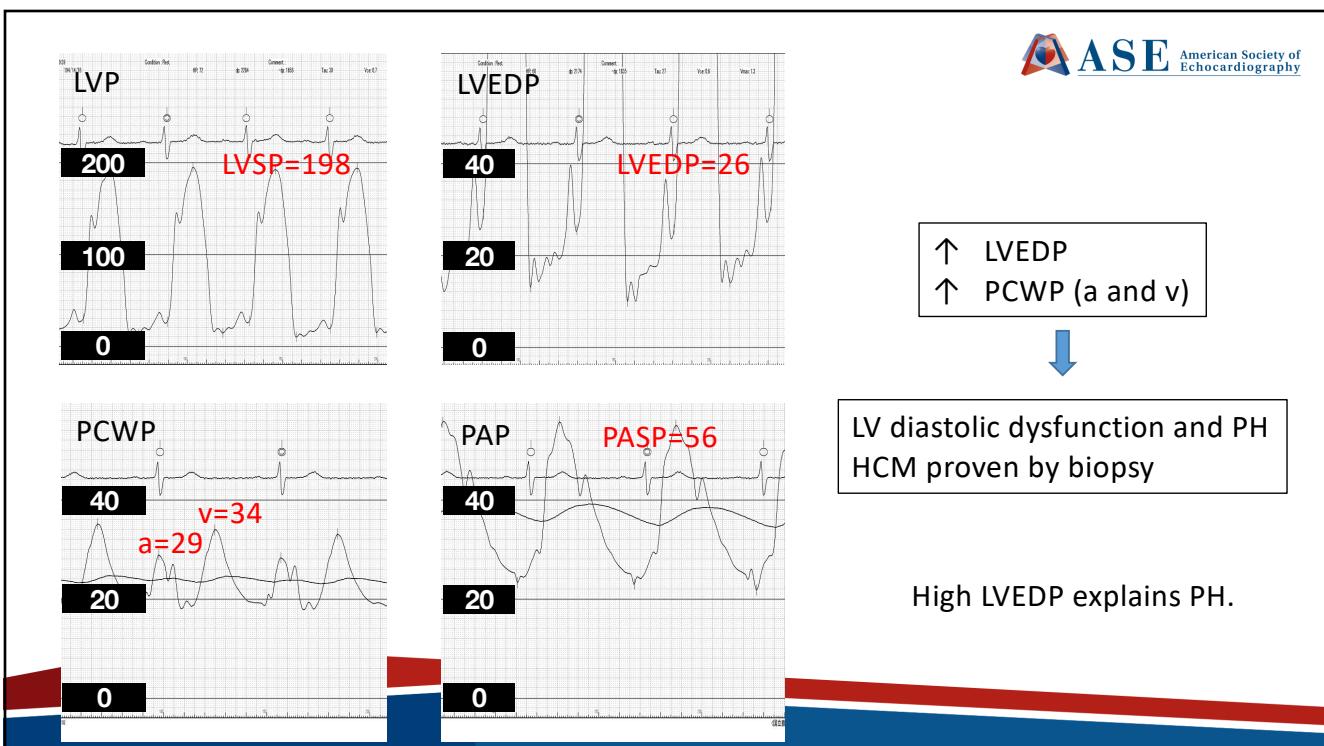
- **Dyspnea on exertion**
- **Hx of hypertension**
- **Hypertrophic CM suspected**
- **Echo**
 - LVEDD / ESD=38 / 21 mm
 - SAM (not aggravated by Ex)
 - EF 67%
 - LAVi 30 mL/m²
 - IVSTh / LVPWTh 12 / 12 mm
 - GLS -14.0%
 - MR trace
 - TR trace, TRPG n/o



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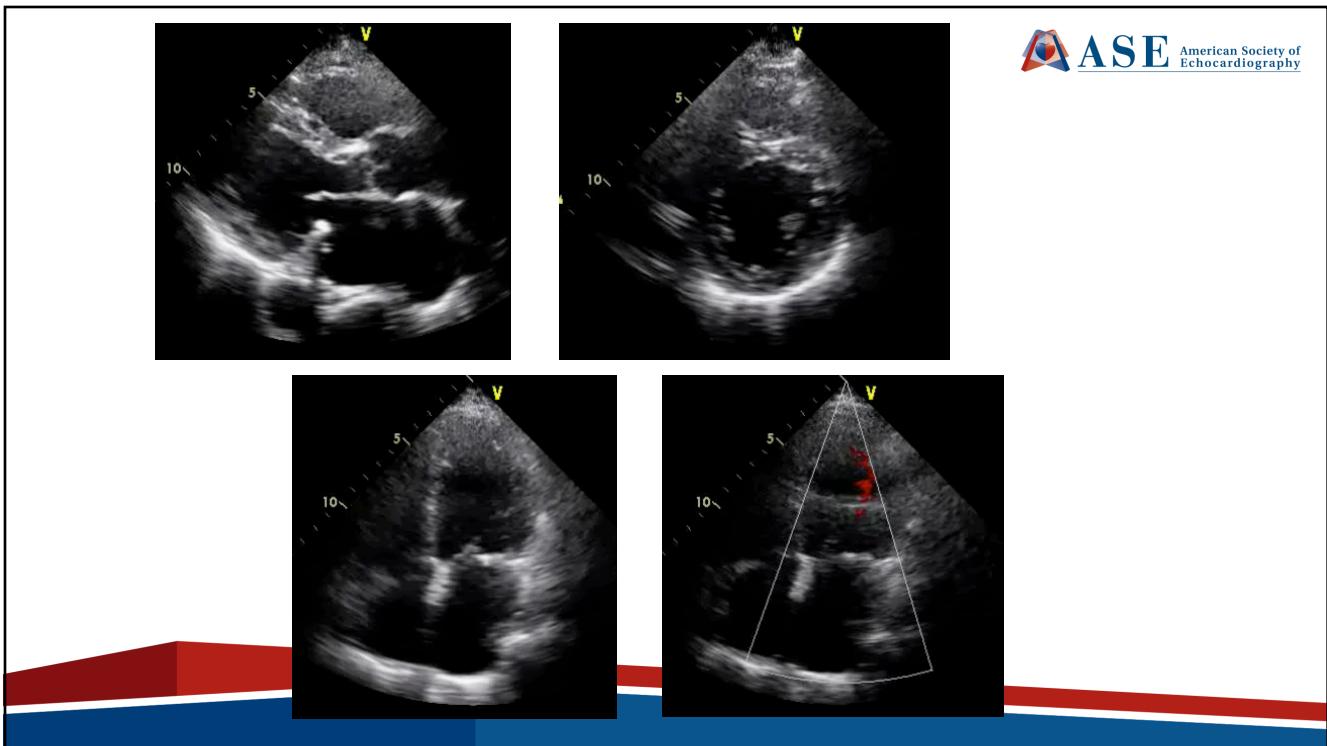
69 yo, female



- She had MV repair and MAZE surgery for severe MR and AF 2 years ago.
- Dyspnea on effort and AF appeared after 1 year of surgery.
- Echo
 - LVEDD / ESD=50 / 28 mm
 - EF 63%
 - LAVi 76mL/m²
 - MV mPG 3 mmHg
 - MR trace
 - TR mild, TRPG 35 mmHg

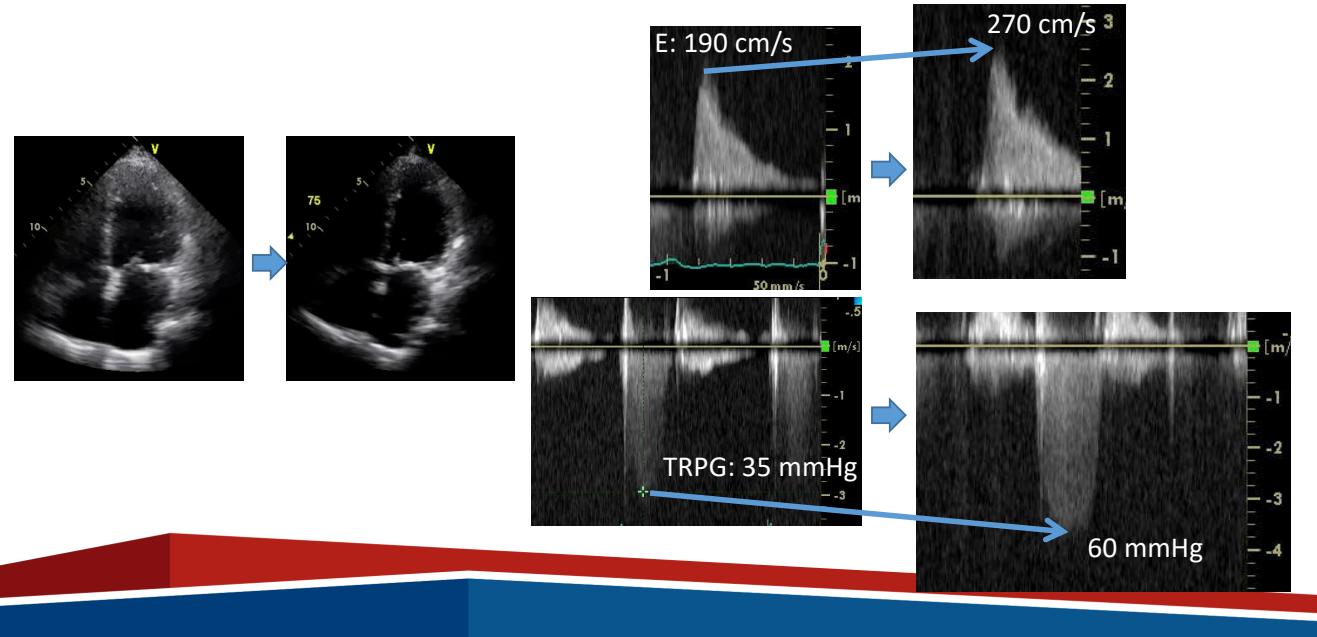


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Exercise echo



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Exercise echo

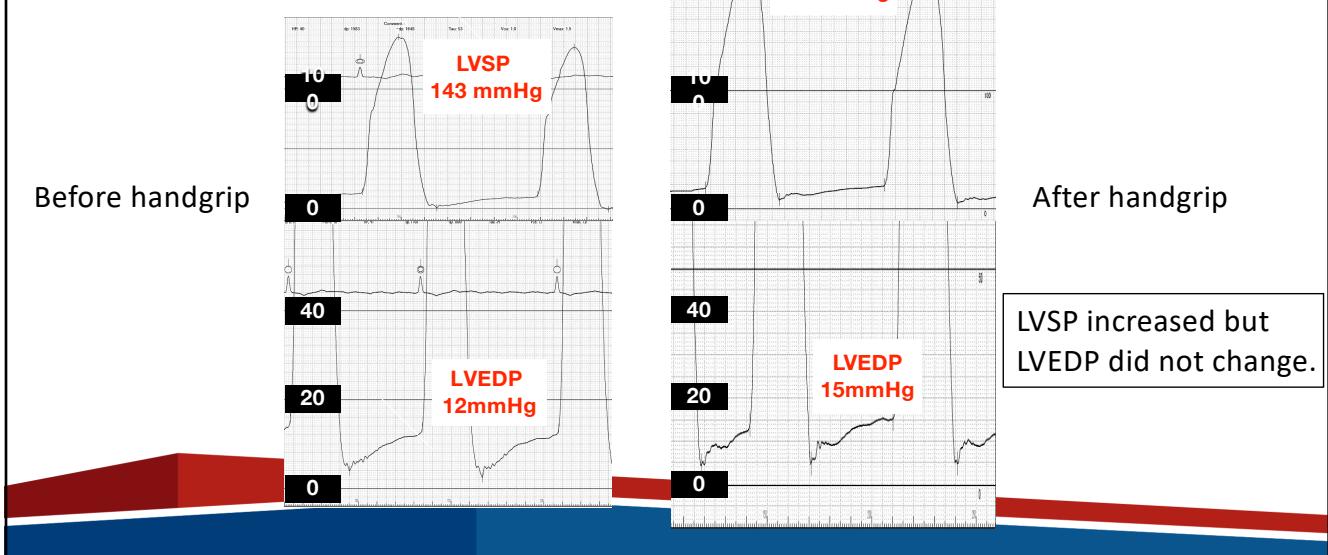


	Before	After
BP, mmHg	168/92	180/93
HR, /m	47	84
Symptoms	None	Dyspnea
EF, %	63	69
E, cm/s	190	270
mPG, mmHg	3	7.5
MR	Trace	Trace
TRPG, mmHg	35	60

Why dyspnea?
Why PH?

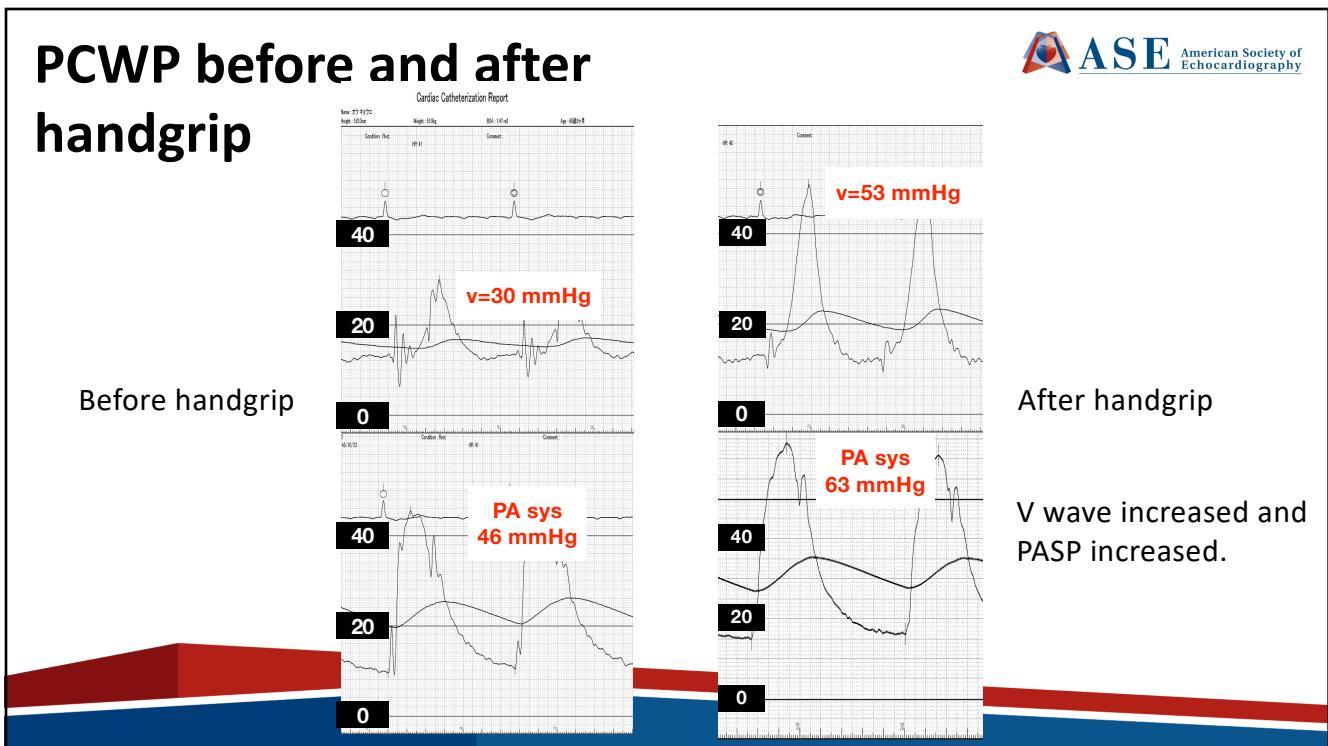
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LVP before and after handgrip



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PCWP before and after handgrip

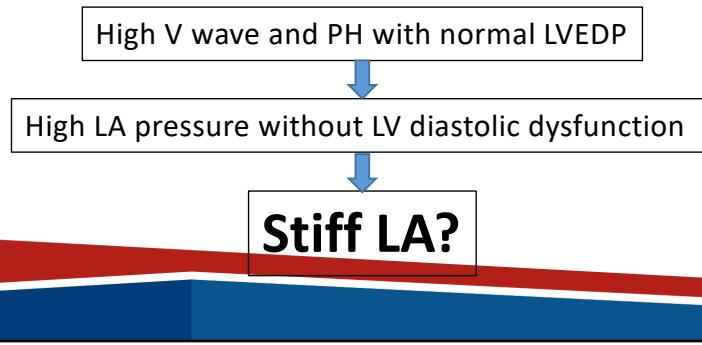


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Changes in intracardiac pressures



	Before handgrip	After handgrip
LVSP, mmHg	143	201
LVEDP, mmHg	12	15
PASP, mmHg	46	63
PCWP v wave, mmHg	30	53



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The clinical consequences of a stiff left atrium



Sanjay Mehta, MD, Francois Charbonneau, MD, David H. Fitchett, MD, FRCP(C),
Derek G. F. Marpole, MD, FRCP(C), Robert Patton, MD, FRCP(C), and
Allan D. Sniderman, MD, FRCP(C). *Montreal, Quebec, Canada*

(Am Heart J 1991;122:1184)

- **6 patients with dyspnea**
 - 5 with MVR, 1 with unsuccessful CABG
 - RV HF > LV HF
 - PH
 - Prominent V wave
 - Symptoms possibly due to reduced LA compliance

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Echo and hemodynamics



	Echo, mm			Cath, mmHg			RI, %		surgery
	LA	LVED	LVES	LV	PCWP	V wave	LVEF	RVEF	MVR
1	60	30	20	130/12		45	75	25	MVR
2	52	42	28	130/12	16	28	74	28	MVR
3	52	50	32	140/6	20	32	48	30	MVR
4	55	42	29	135/8	12→20 (Ex)	14→38 (Ex)	72	32	MVR
5	36	50	30	130/6	25	45	57	35	CABG
6	49	40	25		15→44 (Ex)	24→90 (Ex)	74	51	MVR

Stiff LA syndrome

(Am Heart J 1991;122:1184)

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Stiff left atrial syndrome after catheter ablation for atrial fibrillation: Clinical characterization, prevalence, and predictors

Douglas N. Gibson, MD,* Luigi Di Biase, MD, PhD, FHRS,^{†‡§} Prasant Mohanty, MBBS, MPH,[†] Jigar D. Patel, DO,* Rong Bai, MD, FHRS,[†] Javier Sanchez, MD,[†] J. David Burkhardt, MD, FHRS,[†] J. Thomas Heywood, MD,* Allen D. Johnson, MD,* David S. Rubenson, MD,* Rodney Horton, MD,[†] G. Joseph Gallinghouse, MD,[†] Salwa Beheiry, RN,[¶] Guy P. Curtis, MD,* David N. Cohen, MD,* Mark Y. Lee, MD,* Michael R. Smith, MD,* Devi Gopinath, MD,^{||} William R. Lewis, MD,^{||} Andrea Natale, MD, FACC, FESC, FHRS^{*†‡§¶||}

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(Heart Rhythm 2011;8:1364)

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Atrial ablation



- scar formed at atrial walls and LA stiffened
- decrease in LA compliance
- increase in LA pressure
- PH

Incidence 1.4%

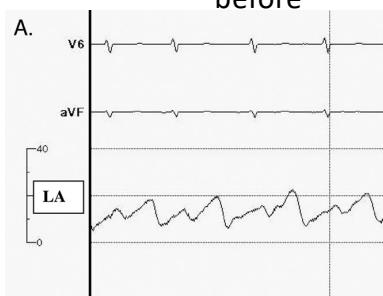
Risk factors

- LA scarring (a bipolar voltage amplitude ≤ 0.05 mV)
- LAD ≤ 45 mm
- DM
- OSAS
- high LA pressure

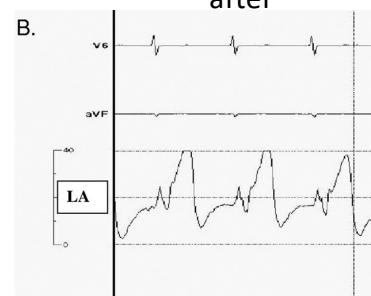
(Heart Rhythm 2011;8:1364)

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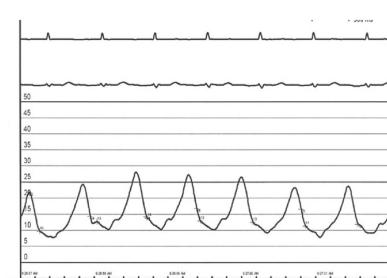
before



after



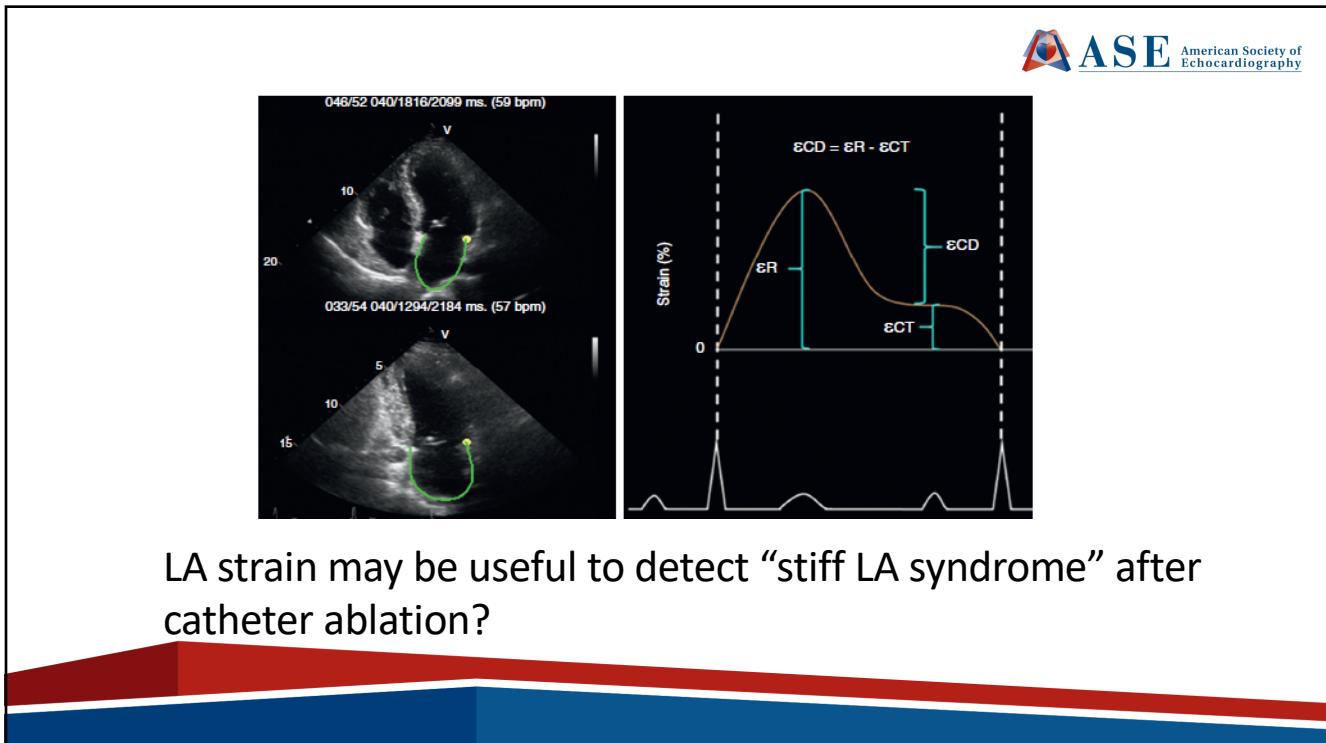
C.



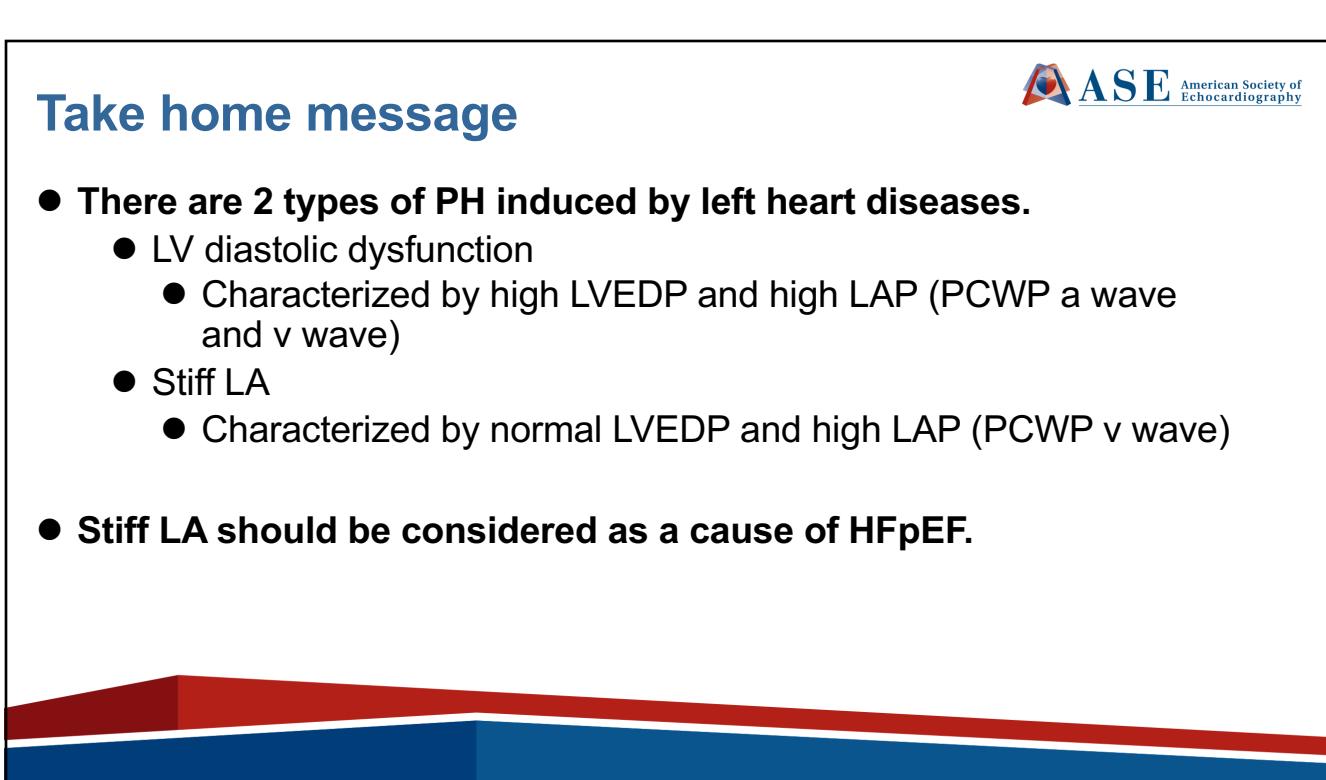
PCWP after diuresis

(Heart Rhythm 2011;8:1364)

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