Pulmonary Case Studies: Live Discussion

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Live Discussion Format

- Introduction of Case Study #1
- Discussion and transition to breakout rooms
- 15 minutes to discuss the case in large groups
- Review
- Introduction of Case Study #2
- Discussion and transition to breakout rooms
- 10 minutes to discuss the case in large groups
- Review cases / Conclusion

Disclosures

NONE

Objectives

To review 2 pulmonary case studies in detail and discuss appropriate treatment plans by using breakout sessions during the lecture

Case Study #1

MH is a 93 yo female who represented to the ED with progressive shortness of breath and intermittent chest pain x 4 days. Chest pain was on the right side ~4th rib sharp without radiation. Records showed she was hospitalized at OSH for COVID-19 virus/ pneumonia and was transferred to Subacute Rehabilitation Facility where she has been staying. Patient is a poor historian. Per the family she had been Rx enoxaparin 30 mg sq to prevent blood clots but stopped it due to recent epistaxis.

PMHx:

- Breast cancer / Endometrial cancer (unknown stage)
- HFpEF
- Hx of DVT (years ago)

Case Study #1

Physical Exam:

VS: BP: 135/55 P: 78 regular RR: 21 Tm 98.4 Pulse ox: 94% on 2 L

- General: cachectic but in no acute distress
- HEENT: PERRL
- CV: RRR without M/R/G
- PULM: bilateral diminished breath sounds
- ABD: soft NTND
- EXT: trace LE edema bilat
- NEURO: no gross neuro deficits

Case Study #1

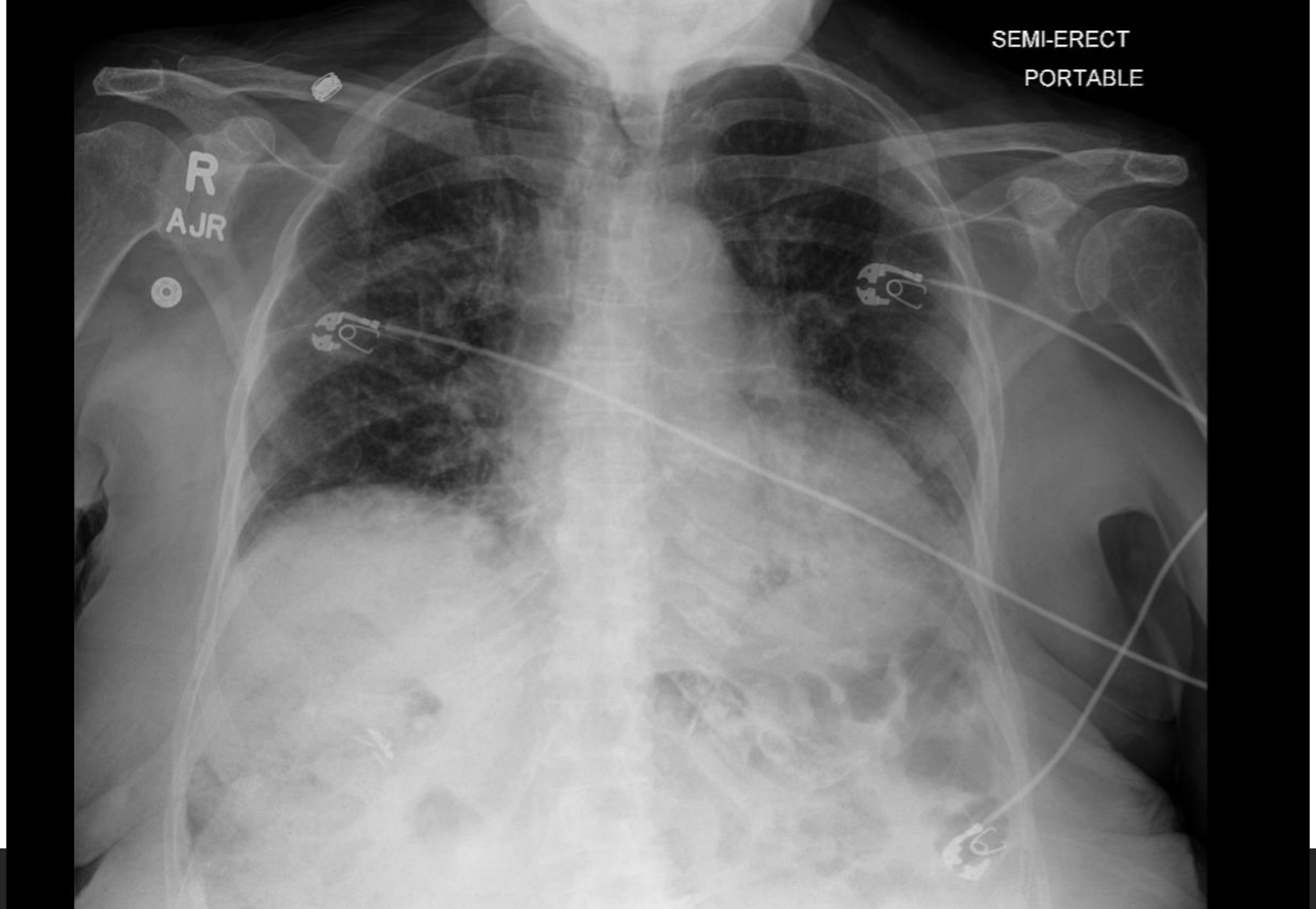
EKG: NSR with chronic RBBB

CXR:

CT:

Labs:

Echocardiogram: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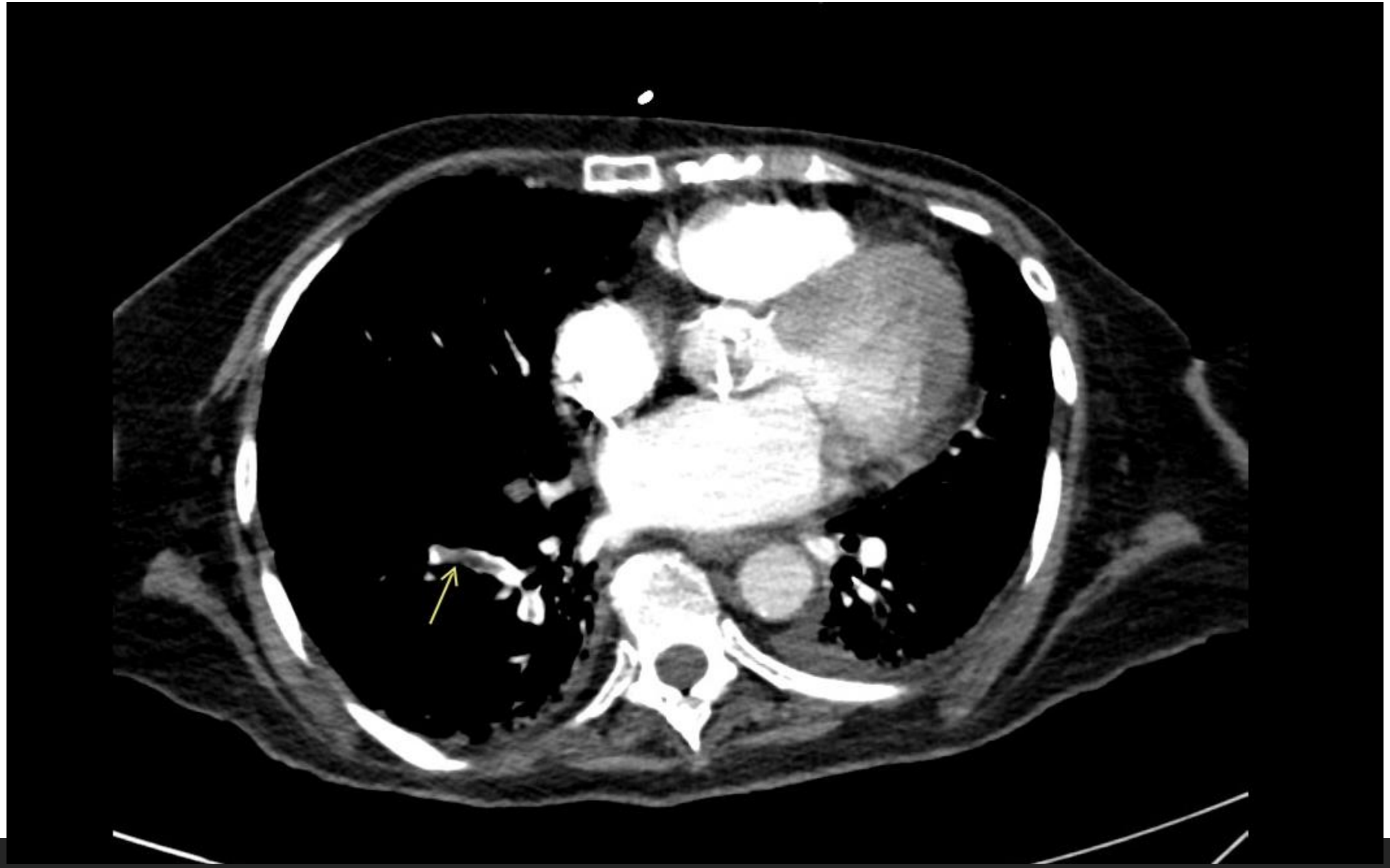

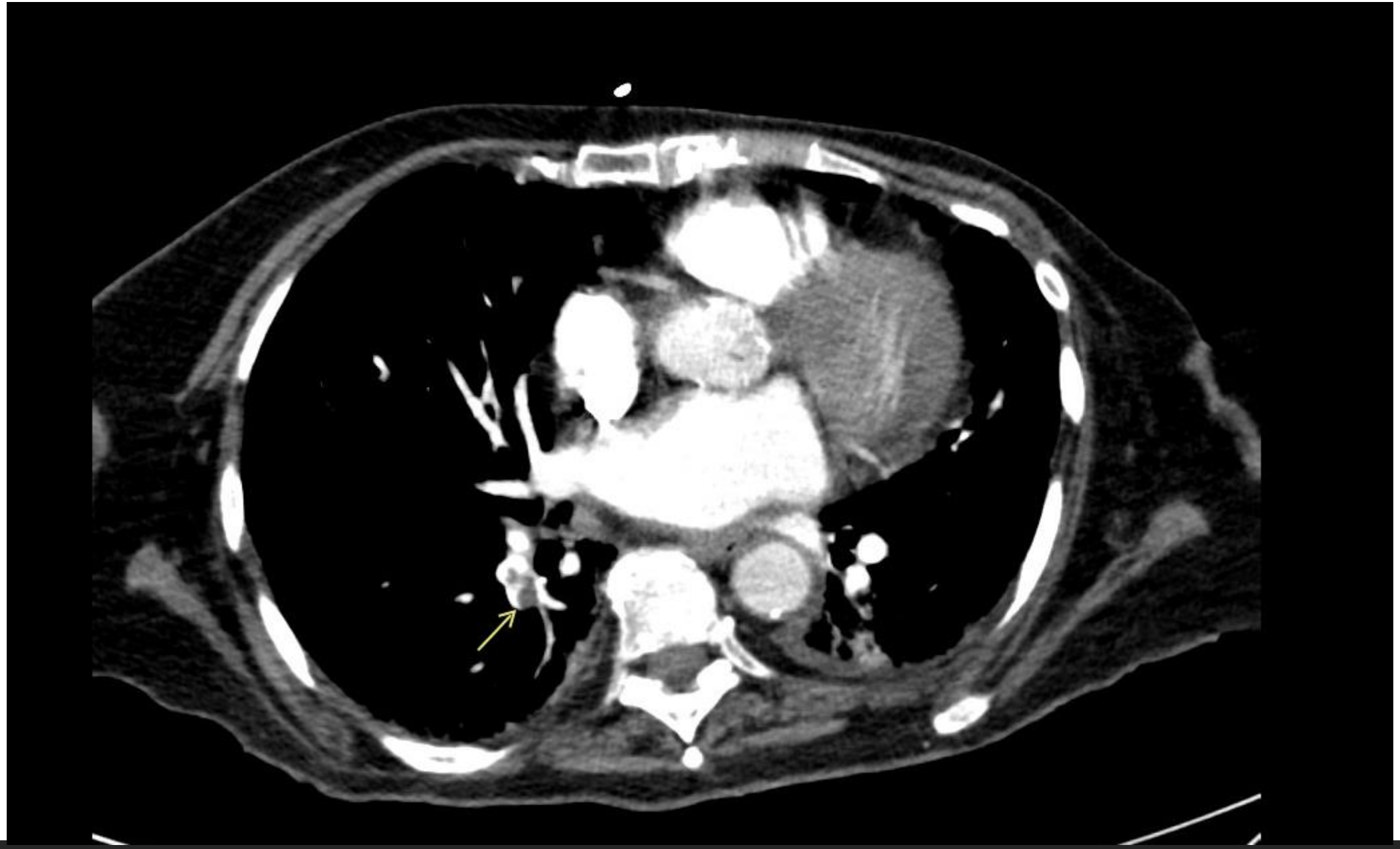

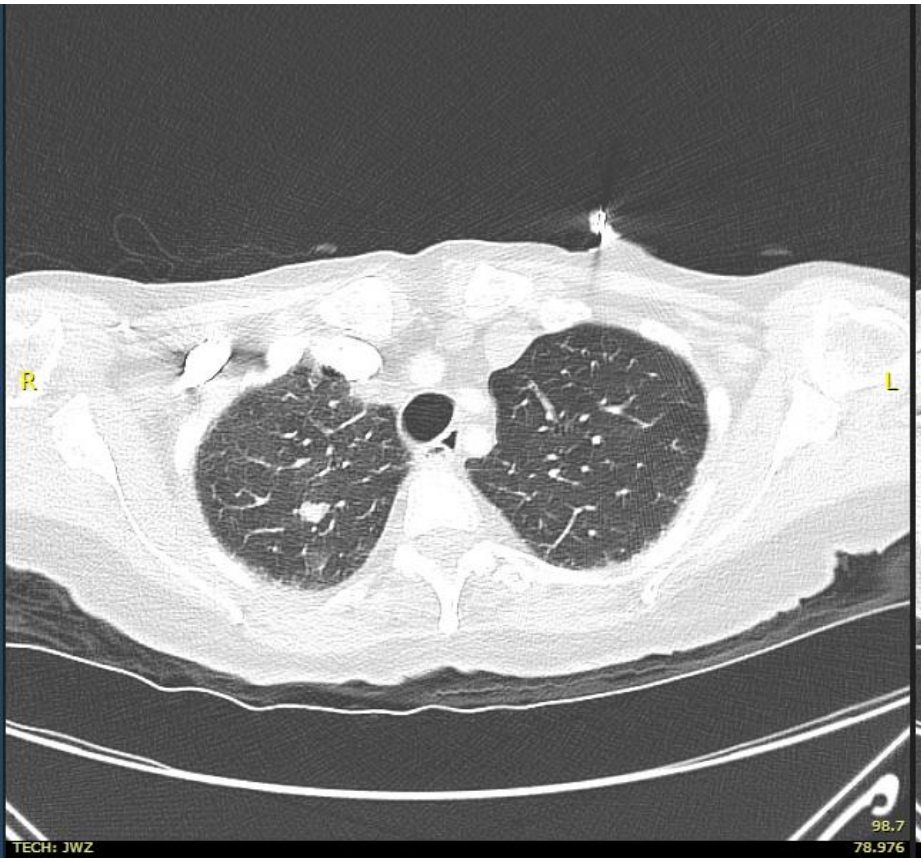
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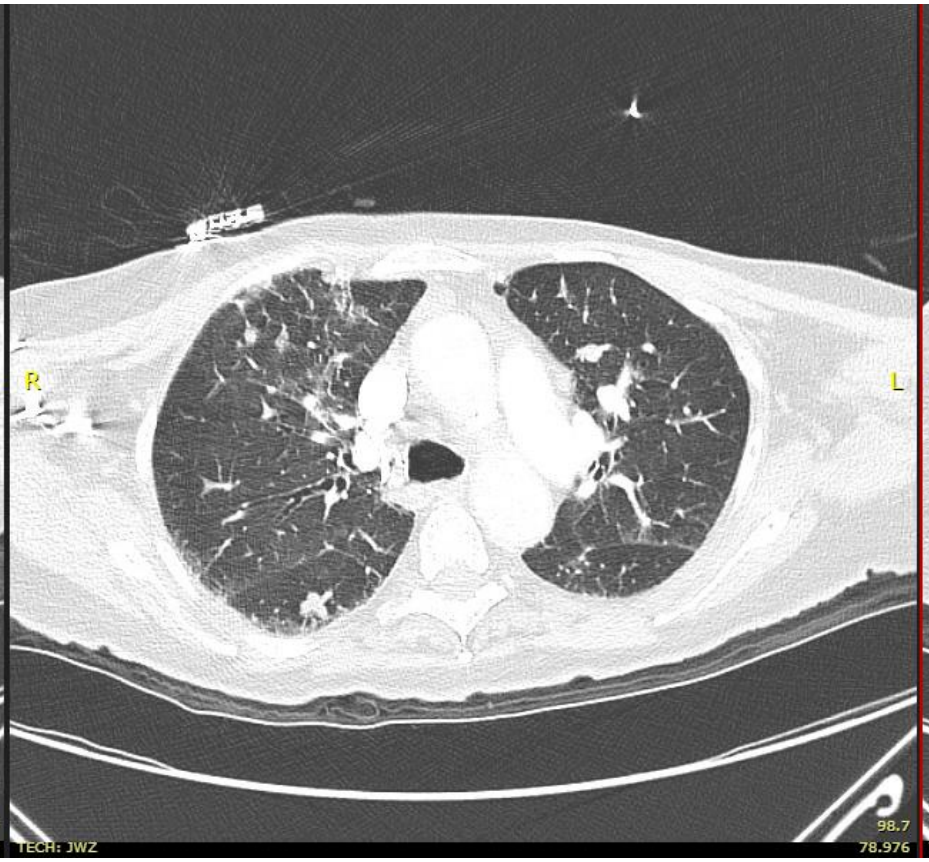
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Labs

BMP – Na+ 137 / k+ 4.2 / Co2 24 / BUN 22 / Creatinine .65

Normal LFTs

LDH 248

Troponin I 0.01 / CK 41 / CK-MB 1.7

CBC – WBC 6.61 / Hgb 8.5 / Hct 26.8 / Plat 226

Echocardiogram:

- Mild LVH / EF 65%
- LV systolic and diastolic fx WNL
- RV normal size and function
- Mod calcification aortic valve with aortic stenosis
- Mild MVR

Case Study #1

Discussion topics:

- Interpret the CXR and CT
- Formulate a differential diagnosis
- Which diagnoses correlate with the Physical Exam / HPI
- Recommendations for any additional labs / imaging
- Select the best Diagnosis
- Discuss best appropriate treatment plans for this individual patients
  - Pros / cons of treatment, different types of anticoagulation

- Final discussion question
  - What is the role of prophylactic anticoagulation in patients with COVID 19 virus?

BREAKOUT SESSION

Case Study #1 Wrap up

Diagnosis:

Additional testing to add?

Treatment plan:

What factors did you consider in the treatment plan?

Role for PPX Anticoagulation in COVID 19 patients, is there any?

Case Study #2

LB is a 58 yo female with unremarkable PMHx except for seasonal allergies presents to the clinic with persistent intermittent shortness of breath, wheezing and dry cough over the past few months. She denies any fever, chills, N/V/D. Admits to occasional clear runny nose.

PMhx: seasonal allergies treated with OTC Zyrtec, possibly had “asthma” vs chronic bronchitis as a child

SocHx: Lifelong non-smoker, occasional marijuana use, social Etoh use 1-2 glasses a wine a week. No pets

Occupation: 5th grade Teacher, denies occupational exposure to chemicals / inhalants

Family Hx: mother – HTN, father – HTN, DMT2

Medications: Albuterol prn

Case Study #2

Physical Exam:

VS: BP: 132/78 P: 82 RR: 16 Pulse ox: 94% on RA

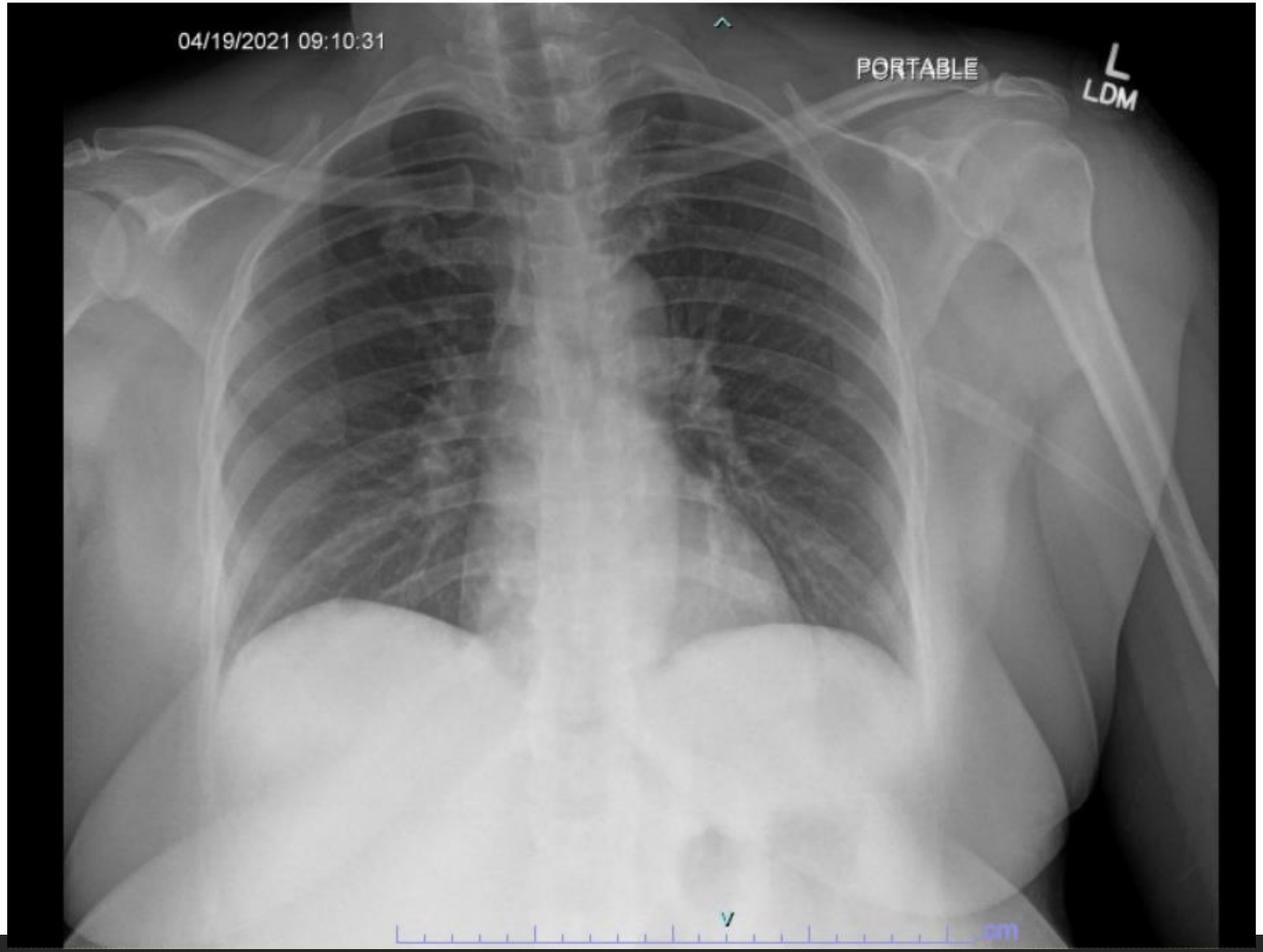
- General: no acute distress, alert and oriented
- HEENT: PERRL, nares with clear rhinorrhea noted and mild edema of the nasal mucosa
- CV: RRR
- PULM: slight expiratory wheezes bilateral with prolonged expiration
- ABD: soft NTND
- EXT: no LE edema / +2 pulses / no clubbing
- NEURO: no gross neurological deficits

Case Study #2

Formulate a Differential Diagnosis as we review labs / imaging / spirometry

Outpatient Testing Recommendations with rationale:

- CXR:
- PFTs:
- Labs: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Case Study #2

Complete PFTs:

Spirometry / DCLO / Lung Volumes / Flow volume loop

Review and interpret

SPIROMETRY

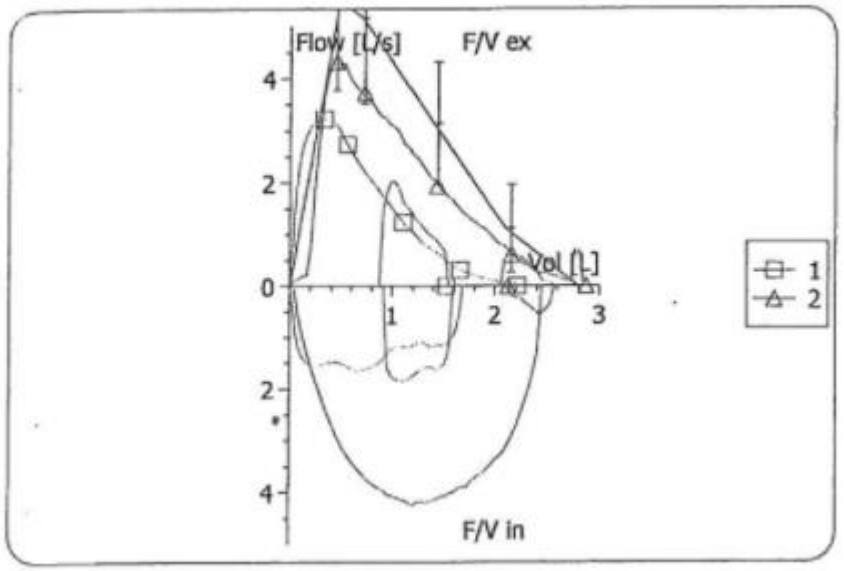
		Pred	Pre	Pre/Pred	Post	%Change
FVC	[L]	2.79	2.21	79.1	2.87	29.8
FEV 1	[L]	2.28	1.52	66.5	2.12	39.8
FEV 1 % FVC	[%]		68.59		73.88	7.7
PEF	[L/s]	5.51	3.22	58.5	4.33	34.5
FEF 25/75	[L/s]	2.41	0.93	38.4	1.61	73.9
MEF 75	[L/s]	5.17	2.73	52.9	3.73	36.4
MEF 50	[L/s]	3.14	1.23	39.2	1.94	57.6
MEF 25	[L/s]	1.12	0.30	27.0	0.61	101.2

DLCO

		Pred	Pre	Pre/Pred	Post	%Change
DLCO SB	[ml/min/mmHg]	19.28	20.31	105.4		
VA	[L]		4.77			
DLCO/VA	[ml/min/mmHg/L]	3.88	4.26	109.8		
DLCOc	[ml/min/mmHg]	19.28	20.25	105.1		
DLCOc/VA	[ml/min/mmHg]	3.88	4.25	109.5		
FRC-SB	[L]	2.49				
TLC-SB	[L]	4.45	4.91	110.4		
RV-SB	[L]	1.65	2.53	153.5		
Hb	[g/100ml]		13.50			

BODYPLETHYSMOGRAPHY

		Pred	Pre	Pre/Pred	Post	%Change
R 0.5 IN	[cmH2O*s/L]	3.06	2.30	75.1		
RV	[L]	1.77	3.07	173.4		
FRC-PL	[L]	2.49	3.72	149.7		
ERV	[L]		0.65			
TLC	[L]	4.45	5.28	118.7		
RV % TLC	[%]	37.07	58.14	156.8		
VC	[L]	2.76	2.21	80.1		
ERV	[L]		0.65			
IC	[L]		1.56			



Labs

Recent Labs:

CBC with diff - WBC 4.2 / Hgb 12.4 / Hct 36 / Plat 189 / absolute eosinophils 0.5 (nl 0-0.2)

BMP – unremarkable

IgE - 136 (nl < 114)

Case Study #2

Discussion topics:

- Interpret the CXR, PFTs and labs
  - Why is checking Ige / eosinophils important in this individual?
- Formulate a diagnosis which correlate with the Physical Exam / HPI / diagnostic tests
- Discuss best appropriate treatment plans for this individual patients
  - Which types of medications and why?
  - What is the role of biologics with certain Asthma phenotypes?
  - What is the recommended follow up?
  - Would you do any further work-up?

BREAKOUT SESSION

Case Study #2 Wrap up

Diagnosis:

Additional testing to add?

Treatment plan:

What factors did you consider in the treatment plan?

Role for IgE / eosinophils with Asthma patients:

Conclusion /Questions