Mr. C

Presentation

- 33 year old man with PMHx significant for HIV (CD4 > 400) who was brought in from HIV clinic for worsening dyspnea

- Recently seen at an urgent care, RPNA with human metapneumovirus and so he was sent home and Covid-19 testing not pursued
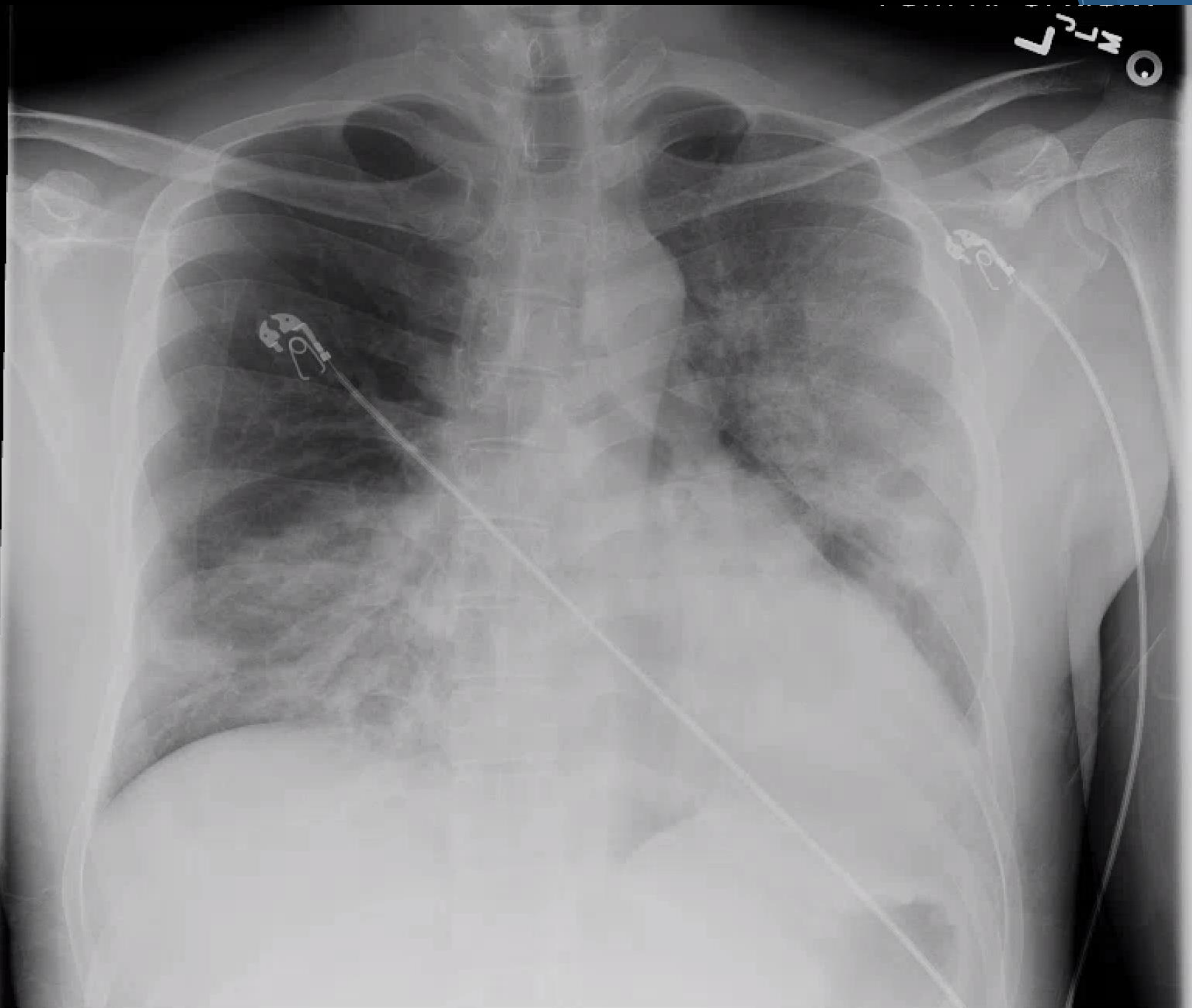
Presentation

- In the ER, he had SpO2 88% on room air and was admitted for hypoxemic respiratory failure

- Initial nasopharyngeal Covid-19 PCR negative

Labs

- WBC 3.2
  - 72% Segs, 6% bands, **11% lymphs** and 11% monos
- Hgb 14.2

- Repeat RPNA negative

- AST 268
- ALT 153
- Alk Phos 107
- Tbili 0.80

- Na 130
- K 4.2
- Cl 90
- Bicarb 24
- AG 16
- BUN 12
- Cr 0.79

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Oxygen supplementation:

▶ First 4 days he required 3-5L NC to maintain SpO2 > 94%

▶ First ABG is hospital day 4

▶ On 7L NC: pH 7.47, CO2 32, O2 54

▶ He was placed on 15L non-rebreather but continued to have desaturations and increased work of breathing

▶ Intubated for hypoxemic respiratory failure

Vent adjustments

▶ On the night of intubation, his SpO2 was noted to be 90-92% and ABG showed pH 7.38, CO2 45 and O2 59

▶ Prior settings:

  ▶ VTPC

  ▶ Tv 410 (5.8 ml/Kg ideal body weight)

  ▶ RR 18

  ▶ PEEP 10

  ▶ FiO2 60%

High sedation requirements

During his entire ICU stay, Mr. C required very high doses of sedatives, up to 4-5 maxed out medications at a time

Vasoactive Meds				
Norepinephrine	10 mc...	11 mc...	12 m...+	11 m...+
Pain/Sedation Drip				
Fentanyl	200 m...		200 ...+	200 ...+
Ketamine	2 mg...+		2 mg...+	2 mg...+
Midazolam		10 mg...	10 m...+	8 mg...+
Dexmedetomidine	1.5 m...	1.5 m...	1.5 ...+	1.5 ...+

Difficulty liberating from the ventilator

- 15 days after intubation, he was extubated following successful spontaneous breathing trial (SBT)

- That night: increased work of breathing, concern for seizure with status epilepticus and so reintubated for airway protection

- 2 days later, extubated again following a successful 2 hour SBT

- Reintubated within 4 hours for work of breathing and tachycardia (3rd intubation)

Tracheostomy?

▶ Tracheostomy had been discussed over the past week given many factors:

▶ -high sedation requirement (assumed discomfort from ETT)

▶ -prolonged intubation (almost 3 weeks)

▶ -multiple reintubations despite successful SBT's

Trach or try again?

Things to consider:

- 1) PPE
- 2) Location

- 3) Time of aersolization
- 4) Experience of team

VIEWPOINT

Surgical Considerations for Tracheostomy During the COVID-19 Pandemic
Lessons Learned From the Severe Acute Respiratory Syndrome Outbreak

Our approach:

- 1) PPE: N95 with contact and droplet precautions; negative pressure room and *careful donning and doffing!*

- 2) Location: bedside is preferred if space and resources are available

- 3) Aerosolization: paralytics administered and ventilation stopped when trachea is accessed

- 4) Team: experienced attending who had worked with the same RT/RN on many cases

Weaning sedation after the tracheostomy

4 Hrs:	HC 10-CCU 04/08 0701 - 04/09 0700					HC 10-CCU 04/09 0701 - 04/10 0700						HC 10-CCU 04/10 0701 - 04/1		
	1101	1501	1901	2301	0301	0701	1101	1501	1901	2301	0301	0701	1101
Vasoactive Meds													
Norepinephrine	7 mc...+		7 mcg...		7 mcg...	7 mcg...		3 mc...+	2 mc...+		3 mc...+	3 mc...+	3 mc...+
Pain/Sedation Drip													
Fentanyl	125 m...	100 m...	100 ...+			100 m...	100 m...	175 ...+	200 ...+	200 m...	150 ...+	150 ...+	0 mcg...
Midazolam								0 mg...≡+					
Dexmedetomidine	0.2 m...	0 mc...+											
Propofol	15 mc...	15 mc...	15 mc...		20 mc...	10 m...+		40 m...+	40 m...+		20 m...+	0 mc...+	
Oxygenation													
SpO2	100+	100+	99+	100+	100+	99+	100+	100+	99+	100+	99+	100+	100+
O2 Device		ETT+	ETT+	ETT+	ETT+			ETT	Trac...+	Trac...+	Trac...+	Trac...+	Trac...+	Trac...+
FiO2 (%)	45+	45+	45+	45+	45+	45+	45+	45▾	45+	45+	45+	40▾	40+

Post Tracheostomy

Mr. C was weaned from vent to trach collar 2 days after his tracheostomy

Remained inpatient 10 more days before being discharge to LTAC for rehabilitation

Hi Will,

I actually was discharged on Monday the 4th and have been recovering pretty quickly at home. I've been tracking my heart rate on my
Apple Watch and have been seeing an improvement towards normal BPM. It's really good to be home. :)