

November 2012

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### Recommended Citation

137. Monteagudo J, Cavarocchi N, Hehn B, Hasan N, Hirose H. Venoarterial extracorporeal membrane oxygenation (ECMO) for support during whole lung lavage for pulmonary alveolar proteinosis. Presented at Chest 2012, Atlanta GA, October 20-25.

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# Venoarterial extracorporeal membrane oxygenation (ECMO) for support during whole lung lavage for pulmonary alveolar proteinosis.

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## Background

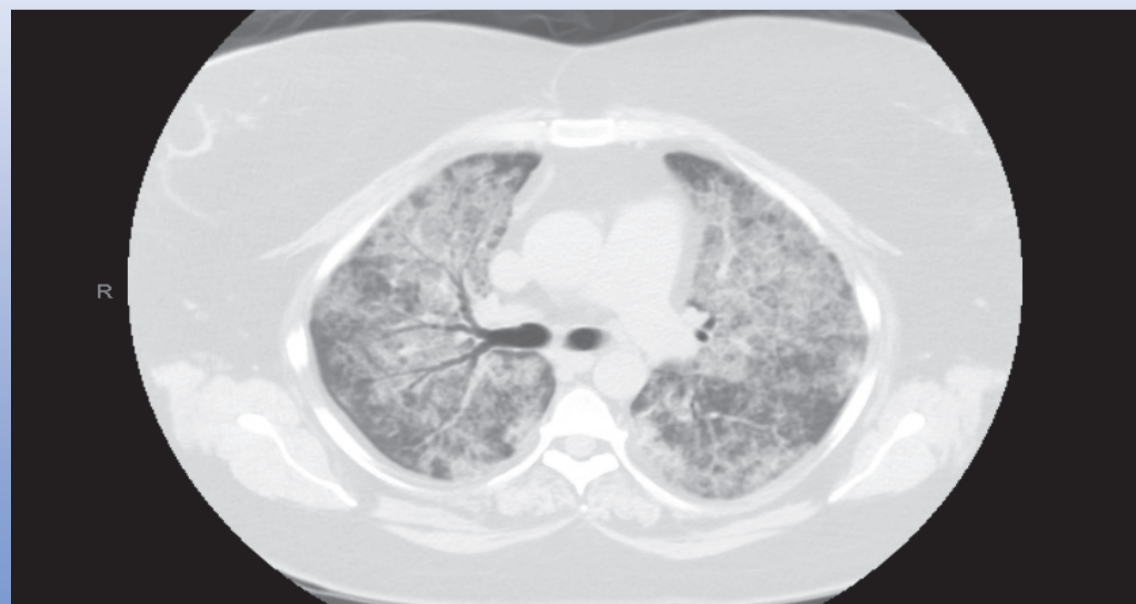
- Whole lung lavage is the standard treatment for progressive PAP leading to respiratory compromise
- Venovenous support has been described in the literature, venoarterial support is only used rarely

## Objective

We describe a case of pulmonary alveolar proteinosis (PAP) treated with whole lung lavage (WLL) using venoarterial ECMO for cardiopulmonary support rather than the conventional venovenous support and describe why this method was advantageous.

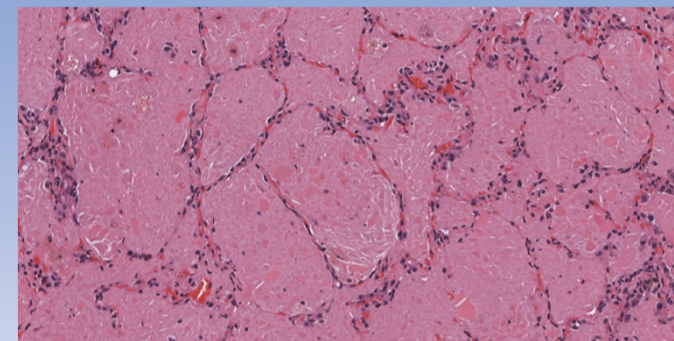
## Case Presentation

- 44 year old female with Bechet's disease, BMI 37
- Presents with progressive dyspnea, undergoes CT scan, suspicious for PAP



## Case Presentation

- Respiratory compromise prompts VATS biopsy for definitive diagnosis, PAP found on biopsy



- Pt required intubation, difficult to oxygenate, taken to operating room emergently for VA ECMO and WLL

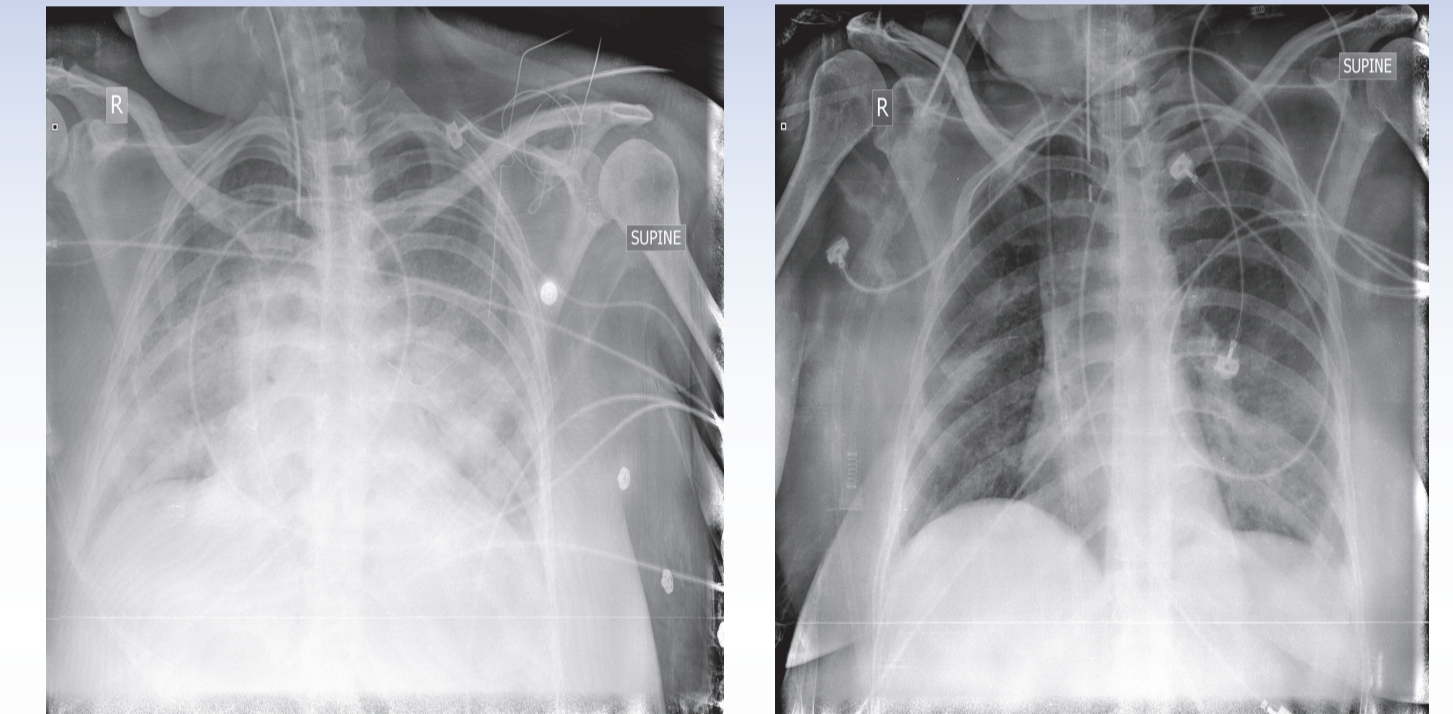
## Operative Details

- Right femoral cannulation with 20F venous cannula and 18F arterial cannula
- Retrograde arterial cannula used to preserve distal limb perfusion
- ECMO flows obtained were satisfactory at 4L/min
- WLL subsequently performed using 12 liters in one liter instillations with chest physiotherapy between liters
- Appearance of fluid initially serosanguineous and turbid and ultimately became serous and transparent



## Post Operative Course

- Decannulated from ECMO on POD#5 with dramatic improvement in oxygenation
- PAP thought to be secondary to Bechet's disease, no anti- GM CSF antibodies to allow treatment with Sargramostim
- Pt discharged from the hospital doing well in follow up



## Conclusions

- We propose that VA ECMO is superior to VV ECMO during whole lung lavage for the following reasons:
  - Hemodynamic support removes the strain on the right ventricle during the stress of WLL
  - Avoids hypoxemia during WLL and post operatively
  - Allows safety during repositioning of patient during WLL to allow percussion and patient turns
  - Allows for bilateral lavage rather than staggered unilateral lavage
- VA ECMO allows hemodynamic and pulmonary support during WLL for PAP