Flare of Rheumatoid Arthritis Associated Interstitial Lung Disease Secondary to Lung Biopsy

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Published In/Presented At

Brewster, N. Goldner, B. Godil, K. Stern, E. Boehmler, J. (2019, October 21). *Flare of Rheumatoid Arthritis Associated Interstitial Lung Disease Secondary to Lung Biopsy.* Poster Presented at: Chest Annual Conference, New Orleans, LA.

Flare of Rheumatoid Arthritis Associated Interstitial Lung Disease Secondary to Lung Biopsy

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Introduction

Rheumatoid arthritis-associated interstitial lung disease (RA-ILD) most often presents with dyspnea and a nonproductive cough. The progression and prognosis of the disease are usually determined by the ILD subtype. The most common subtype is usual interstitial pneumonia (UIP) followed by non-specific interstitial pneumonia (NSIP).[1] For most, the disease remains sub-clinical without progression. Flares can occur, being precipitated by insult to the lungs including infection and even lung biopsy.[2]

Case presentation

A 44-year-old female with a history of non-erosive rheumatoid arthritis on methotrexate, IV drug abuse, and slowly progressive ILD presented to the hospital due to hypoxemia and worsening cough. Computed tomography (CT) of the chest demonstrated interlobular septal thickening, subpleural peripheral honeycombing and ground-glass opacities with a bibasilar and posterior predominance (Images 1 and 2). Methotrexate was discontinued and the patient was started on broad spectrum antibiotics with initiation of an infectious workup. Due to her unclear etiology of lung disease and failure to improve on antibiotics, a video assisted right upper lung biopsy on day six of hospitalization was performed. The pathology showed fibrosis with honeycombing and dilatation of bronchi consistent with UIP. The patient was then started on pulse dose steroids and rituximab as her hypoxia worsened. Eleven days after biopsy the patient was emergently intubated and ultimately placed on veno-venous extracorporeal membrane oxygenation (VV-ECMO) for refractory hypoxemia. Her course was complicated by streptococcal bacteremia with septic shock, Pseudomonas ventilator associated pneumonia, superior vena cava thrombus, and severe oropharyngeal bleeding. Unfortunately, the patient was not a candidate for lung transplant due to her severity of illness and multiple infections. She was ultimately taken off of life support on day 68 of hospitalization.

Imaging

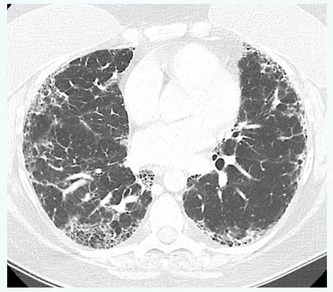

Image 1. CT chest in the transverse view showing interlobular septal thickening, subpleural peripheral honeycombing and ground-glass opacities.

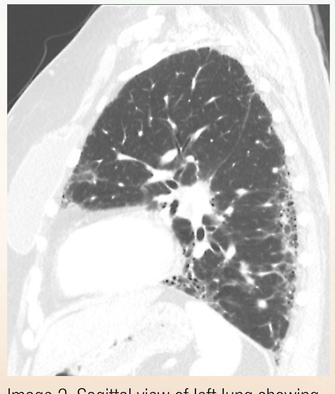

Image 2. Sagittal view of left lung showing subpleural peripheral disease with a basilar and posterior predominance.

Discussion

- Acute respiratory failure of unclear etiology can be difficult to treat as management can vary drastically. The differential diagnosis in this case includes methotrexate toxicity, infection, and RA-ILD.
- Ultimately the patient was diagnosed with a flare of her ILD with surgical lung biopsy possibly further exacerbating the flare.
- Biopsy may have been avoided with her CT findings being consistent with UIP pattern. One could argue that pathology would likely show similar findings and not be contributory to changing the course of treatment.
- Regardless of the cause, RA-ILD flares can be difficult to manage as treatment with steroids may not be enough and rituximab can take up to 4-6 weeks before seeing clinical improvement, if at all.

Conclusion

RA-ILD can atypically progress at a rapid rate. When considering open lung biopsy, it is judicious to weigh the risks versus the benefits involved. For patients with already progressive ILD, flares must be considered as one of those risks.

REFERENCES

[1]Solomon JJ, Chung JH, Cosgrove GP, et al. Predictors of mortality in rheumatoid arthritis-associated interstitial lung diseases. Eur Respir J. 2016;47(2):588-96.

[2]Bando M, Ohno S, Hosono T, et al. Risk of acute exacerbation after video-assisted thoracoscopic lung biopsy for interstitial lung disease. J Bronchology Interv Pulmonol 2009;16(4):229-35.

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