Rheumatoid Pleural Effusion in a Patient Without a Previous Diagnosis of Rheumatoid Arthritis

Anna Johnson, MD

Introduction

Rheumatoid pleural effusion is a well-known complication of rheumatoid arthritis, although a rare one. Patients usually carry a diagnosis of rheumatoid arthritis (RA) prior to being diagnosed with a rheumatoid effusion.

Clinical Case

•A 68 year old female presented with 3-4 days of dyspnea on exertion and was found to be hypoxemic. Chest x-ray showed a large left-sided pleural effusion.

• Thoracentesis drained about 300 ml of yellow serous fluid. Pleural fluid analysis revealed an exudative effusion with lymphocytic predominance. The pH of the fluid was 8.0, glucose was 92 mg/dL, and ADA was 19.9 U/L.

• Pleural gram stain, cultures and AFB were negative. Pleural cytology was negative for carcinoma, and a chest CT did not show a mass. Pleural fluid RF was 2200 IU/mL.

• The patient did not have a diagnosis of RA on presentation. However, the patient's exam revealed inflammatory arthritis in her hands, and X-rays showed erosions in the hands. Serum RF and anti-CCP were positive.

• A thoracic catheter could not effectively drain the effusion, and a large effusion persisted on repeat imaging.

• After infection, malignancy and TB were ruled out, it was concluded that the patient had a rheumatoid effusion. She was initiated on azathioprine and prednisone with gradual improvement in her symptoms, and near-resolution of her effusion on repeat chest x-ray 4 weeks later.

Differential Diagnosis

Lymphocytic Pleural Effusion

- Malignancy
- Tuberculosis
- Rheumatoid Effusion
- Chylothorax
- Post-CABG

Results

	Pleural fluid	Serum
Protein	4.9 g/dL	6.6 g/dL
LDH	688 U/L	110 U/L
Lymphocytes	81%	
Glucose	92 mg/dL	134 mg/dL
pH	8.0	
ADA	19.9 U/L	
Cytology	Negative	
RF	2200 IU/mL	792 IU/mL

Table 1. Laboratory evaluation.

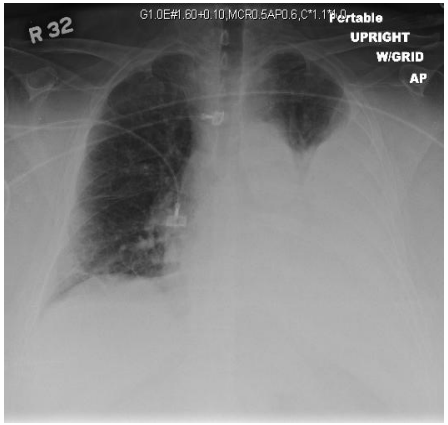

Figure 1. Chest x-ray with a large left-sided pleural effusion.

Conclusions

•This case illustrates a rare presentation of rheumatoid effusion in a patient without a previous diagnosis of RA.

• Although the patient had inflammatory synovitis on exam, the lack of a previous diagnosis of RA could have delayed the appropriate diagnosis had the exam and the lack of another explanation for the effusion not raised suspicion.

• This case was atypical for rheumatoid effusion in that the pleural fluid had a high glucose and a high pH.

• However, the lack of evidence for another cause of the lymphocytic pleural effusion combined with the high pleural fluid RF and the significant improvement with immunosuppressive medications confirmed the diagnosis of rheumatoid effusion.

• This case demonstrates that rheumatoid effusion should be in the differential for an atypical pleural effusion without obvious cause even when autoimmune disease has not yet been established.

References

1. Solling Avnon, L. *Pleural effusion associated with rheumatoid arthritis: what cell predominance to anticipate?* Rheumatol Int. 2007; 27:919-925.
2. Bouros, D. *Pleural Involvement in Systemic Autoimmune Disorders*. Respiration. 2008;75:361-371.
3. Tanoue, LT. *Pulmonary manifestations of rheumatoid arthritis*. Clinical Chest Medicine. 1998; 19:667.
4. Gary Lee, YC. *Adenosine Deaminase Levels in Nontuberculous Pleural Effusions.* Chest. 2001; 120: 356-361.

KU MEDICAL CENTER
The University of Kansas