Pleurisy in A Young Female: A Can’t Miss Diagnosis

Giuliana G. Berardi, MD\textsuperscript{1} and Ashwin Karanam, MD\textsuperscript{2}

\textsuperscript{1}Department of Internal Medicine at Temple University Hospital, Philadelphia, PA, USA
\textsuperscript{2}Department of Thoracic Medicine and Surgery, Temple University Hospital, Philadelphia, PA, USA

Introduction

Pleurisy is typically associated with bacterial and viral infections affecting the lung. However, here we present a case of a young female with undiagnosed Systemic Lupus Erythematosus (SLE) whose presenting symptom was pleuritic chest pain.

History of Present Illness

21 year old African American female with no medical history, presented with acute on chronic pleuritic chest pain, night sweats, and intermittent bilateral hand pain.

One month prior to admission, she presented to outside hospitals with similar complaints. Work up demonstrated non-specific EKG changes. She was treated for costochondritis with NSAIDs and referred to cardiology. Her family history was significant for a maternal cousin with a diagnosis of SLE.

Laboratory Results

\begin{itemize}
\item Creatinine 0.47
\item ESR 40
\item CRP 12
\item Blood cultures (-)
\item Streptococcal Urine Ag (-)
\item Respiratory Viral Panel (-)
\item Legionella Urine Ag (-)
\item ANA 1:1280 (speckled pattern)
\item ANCA (-)
\item Smith/RNP Ab (+)
\item C3 119
\item Anti-double stranded Ab (-)
\item C4 32
\item Rheumatoid Factor 364
\end{itemize}

Thoracentesis: Exudative effusion

Pleural biopsy: fibrovascular adipose tissue with acute and chronic inflammation and granulation tissue formation.

Imaging

Figure 1: CT Angiogram Chest with right sided loculated pleural effusion and negative for pulmonary embolism.

Clinical Course

She was started on broad spectrum antibiotics for concern for pneumonia. Given loculated pleural effusion, thoracentesis was performed. Despite antibiotics and negative infectious work up, her fevers persisted. Thoracic surgery performed VATS decortication due to concern for empyema. Pleural biopsy and serologic results were concerning for autoimmune etiology. Rheumatology was consulted and the patient was diagnosed with SLE. She was started on prednisone with improvement in her symptoms.

Discussion

\begin{itemize}
\item Pleural effusions are commonly visualized on radiography, with the leading causes of pleural effusion in the U.S. being heart failure and pneumonia.\textsuperscript{1}
\item Nearly 50\% of SLE patients have cardiac and lung involvement, yet only 2.5-3\% of all patients present with lupus pleuritis.\textsuperscript{2}
\item Lupus pleural effusions are typically exudative, with only 1-3\% of patients having pleural effusion as their presenting symptom.\textsuperscript{2,3}
\item While rare, lupus pleurisy and pleural effusion have been found to respond well to oral corticosteroids and generally portend a good prognosis.
\end{itemize}

References:

\begin{enumerate}
\item Wan KS. Pleuritis and pleural effusion as an initial presentation of systemic lupus erythematosus in a 23-year-old woman. Rheumatol Int. 2008;28:1257-60
\end{enumerate}

Physical Exam

Vitals: T: 101.1F, HR 110, BP 120/80, O2 95\% on 4L

General: young female in moderate respiratory distress
Lung: decreased lung sounds in the Right Lower Lung Field
Heart: tachycardic, no murmurs, rubs, or gallops
MSK: no joint swelling, erythema
Skin: no rashes

*References:

3. Wan KS. Pleuritis and pleural effusion as an initial presentation of systemic lupus erythematosus in a 23-year-old woman. Rheumatol Int. 2008;28:1257-60*