Cholesterol Crystals in Pleural Fluid

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Figure 1. Scale bar = 25 μm (B–D).

A 67-year-old female patient presented with rheumatoid arthritis and a worsening right-sided pleural effusion. Thoracentesis revealed a cloudy yellow fluid (Figure 1A). The pleural fluid white blood cell count was 160/ μL . A Wright stain was performed (Figure 1B) and the manual differential showed 7% neutrophils, 10% lymphocytes, and 83% monocytes/macrophages with some cells disintegrated. Faint linear edges (arrows) on the smear were observed by the laboratory technologist. A wet mount showed many crystals (Figure 1C) with a characteristic “shattered glass” appearance. Crystals in a different field are shown under polarized light (Figure 1D). Bacterial, fungal, and AFB cultures were negative. The patient showed symptomatic improvement after thoracentesis. Cholesterol crystals can sometimes be seen in patients with long-standing pleural effusions due to conditions such as rheumatoid arthritis or tuberculosis (1). This type of pleural effusion is categorized as “pseudochyloous” (2). A chyloous pleural effusion (or chylothorax) would be expected to contain chylomicrons, elevated triglycerides, and/or a lymphocytic predominance (3).

Author disclosures are available with the text of this article at www.atsjournals.org.

References

1. Garcia-Zamalloa A, Ruiz-Irastorza G, Aguayo FJ, Gurrutxaga N. Pseudochylothorax: report of 2 cases and review of the literature. *Medicine (Baltimore)* 1999;78:200–207.
2. Galagan KA, Blomberg D, Cornbleet PJ, Glassy EF, editors. Chyloous vs. pseudochyloous effusions. In: *Color atlas of body fluids: an illustrated field guide based on proficiency testing*. Northfield, IL: College of American Pathologists; 2006. pp. 268–269.
3. Higgins JT. Chylothorax and cholesterol pleural effusion. *Semin Respir Crit Care Med* 2010;31:743–750.