A Case of the World’s Most Eosinophilic Pleural Effusion

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Abstract

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INTRODUCTION: Pleural fluid eosinophilia is most commonly associated with malignancy, infection, trauma, and, rarely, medications, with eosinophil counts reportedly ranging 14.5-43.5%. We present a rare case of a drug-induced eosinophilic pleural effusion (EPE) with the highest eosinophil percentage (88%) ever reported in the literature.

CASE PRESENTATION: 53-year-old male with disorganized paranoid schizophrenia, on clozapine and valproic acid (VPA), was seen in the ED for increasingly erratic behavior and found to be tachypneic. Chest radiography identified a large left pleural effusion (Figure A). Diagnostic thoracentesis revealed a highly eosinophilic (88%) exudate with associated blood eosinophilia. An extensive evaluation excluded other known causes of EPE: pneumonia, malignancy, parasites, hemothorax, and pneumothorax. It was determined that a drug-induced pleural effusion was likely. The Naranjo adverse drug reaction probability scale indicated an adverse reaction to clozapine was probable. Immediately upon discontinuation of clozapine, peripheral eosinophilia resolved. Upon follow-up several weeks later, the effusion remained unchanged, but peripheral eosinophilia recurred. At this point, VPA was stopped as well, and 4 weeks later both the effusion and peripheral eosinophilia resolved (Figure B).

DISCUSSION: EPE is defined as a pleural effusion that contains at least 10% eosinophils. Commonly it occurs in the presence of blood or air in pleural space, infections, and malignancy. Malignancy is thought to be the most common cause followed by infection, unknown, post-traumatic, and miscellaneous. Drug-induced EPE is one of the miscellaneous causes. Literature reports 8 drugs known to cause EPE, including clozapine and VPA. Both have been documented in a few case reports as a cause of EPE and, more rarely, of peripheral eosinophilia. There have also been a few case reports of clozapine-induced pleural effusion in the literature, and one recent case report describes both pleural fluid and peripheral eosinophilia. The range of eosinophilia cited is 14.5-43.5%, with the highest reported 83%.

CONCLUSIONS: To our knowledge, our case has the highest eosinophilic count ever reported in any pleural effusion. While VPA and clozapine have individually been cited as causes of pleural effusions in literature, this is the first reported case of a drug-induced pleural effusion to
implicate both drugs in a single case. This case strongly highlights the importance of recognizing the cause and effect relationship between psychotropic drugs and pleural effusions in the psychiatric population.


**DISCLOSURE**: The following authors have nothing to disclose: Vivian Ku, Irene Galperin

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