

Medical Image of the Week: Chemotherapy-Induced Diffuse Alveolar Hemorrhage

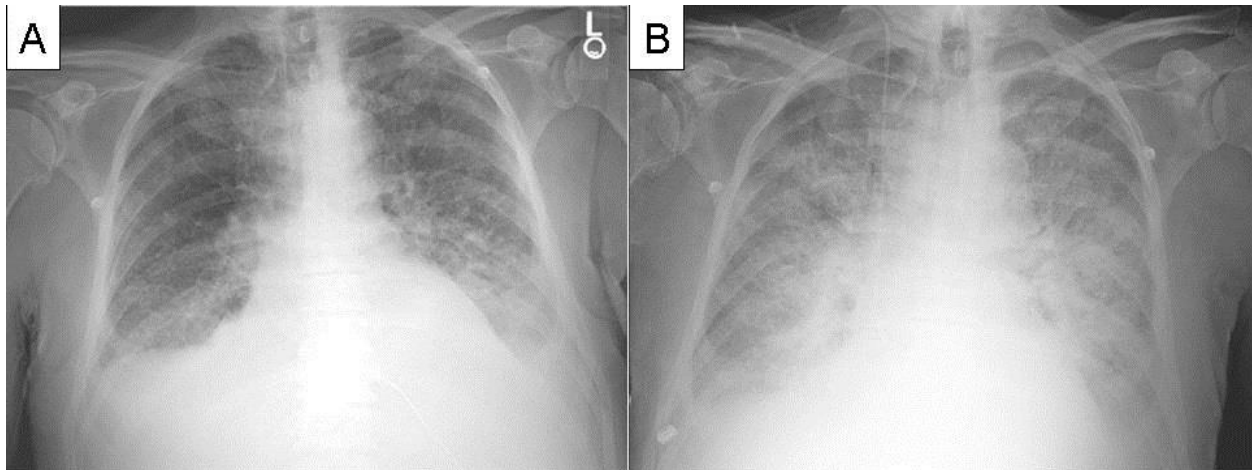


Figure 1. Panel A: Chest X-ray on admission consistent showing some pulmonary edema and effusions at the bases. Panel B: Chest X-ray after initiation of chemotherapy showing diffuse bilateral infiltrates and consolidation.

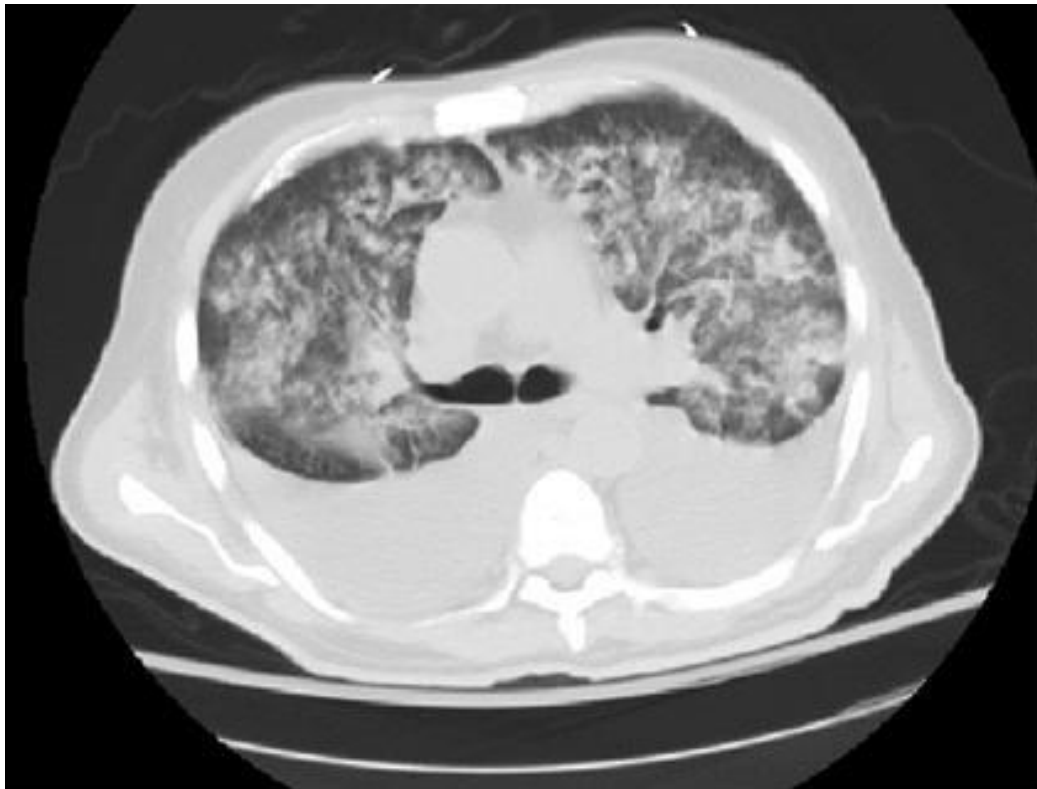


Figure 2. CT scan of the chest after initiation of chemotherapy showing patchy ground glass consolidation throughout the lung fields bilaterally. Large bilateral pleural effusions can also be seen.

A 65-year-old man presented with relapse of his acute myeloid leukemia (AML). On admission he was seen to have a reduced ejection fraction at 40-50%. His chest X-ray showing pulmonary edema and bilateral pleural effusions (Figure 1A). He was diuresed to his dry weight to improve his clinical status. The decision was made to re-induce him for his AML with fludarabine and cytarabine without idarubicin (due to his reduced ejection fraction). After 2 doses of each the fludarabine and cytarabine the patient showed worsening respiratory distress, had increasing oxygen requirements and started having hemoptysis. Repeat imaging of his chest showed bilateral infiltrates in his lungs on both chest x-ray (Figure 1B) and chest CT (Figure 2). Infectious causes for the changes were sought and ruled out. He was transferred to the ICU where he was put on high flow oxygen and received methylprednisolone 1000 mg IV daily for 3 days. During this period his blood hemoglobin also dropped from 8.2 g/dl to 6.8 g/dl requiring transfusion of 1 unit of packed red blood cells. After 3 days of supportive care he was transferred back out of the ICU on oxygen by nasal cannula with progressive improvement in his lung function. Pulmonary toxicity is a known side effect resulting from both fludarabine and cytarabine and can present in a variety of forms. Their prompt recognition is important due to the steroid responsive nature of many of these once infectious causes have been ruled out.

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References

1. Helman DL Jr, Byrd JC, Ales NC, Shorr AF. Fludarabine-related pulmonary toxicity: a distinct clinical entity in chronic lymphoproliferative syndromes. *Chest*. 2002 Sep;122(3):785-90. [\[CrossRef\]](#) [\[PubMed\]](#)
2. Rudzianskiene M, Griniute R, Juozaityte E, Inciura A, Rudzianskas V, Emilia Kiavialaitis G. Corticosteroid-responsive pulmonary toxicity associated with fludarabine monophosphate: a case report. *Turk J Haematol*. 2012 Dec;29(4):392-6. [\[CrossRef\]](#) [\[PubMed\]](#)
3. Forghieri F, Luppi M, Morselli M, Potenza L. Cytarabine-related lung infiltrates on high resolution computerized tomography: a possible complication with benign outcome in leukemic patients. *Haematologica*. 2007 Sep;92(9):e85-90. [\[CrossRef\]](#) [\[PubMed\]](#)