GVHD Back With a Vengeance: Late Pulmonary Complications of Hematopoietic Stem Cell Transplant

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Case Description

A 56 yo man with a history of CMV-negative hematopoietic stem cell transplant for acute lymphoblastic leukemia 15 years previously presented to the emergency department with shortness of breath. He had been experiencing symptoms for about 3 months, but they had acutely worsened over the previous week.

On presentation, vital signs were notable for fever to 101.8F (38.8C) and exam revealed coarse crackles in the bilateral lungs. Laboratory studies were remarkable for leukocytosis to 12.8×10^9 cells/L and sodium of 129 mEq/L. Chest x-ray revealed bilateral opacities concerning for atypical pneumonia. The patient was started on broad spectrum antibiotics.

Hospital Course

His respiratory status continued to worsen, at which time a chest CT revealed diffuse ground glass opacities.

Subsequent viral testing was negative. Bronchoscopy revealed no signs of infection or malignancy, including multiple negative fungal PCR studies and PJP DFA and culture. Patient was not able to tolerate transbronchial biopsy. The decision was made to start empiric steroid therapy (1mg/kg prednisone) for presumed organizing pneumonia secondary to HSCT. The patient experienced subjective symptom improvement within 24 hours.

Imaging showed improving air space disease 3 weeks after initiation of steroids.

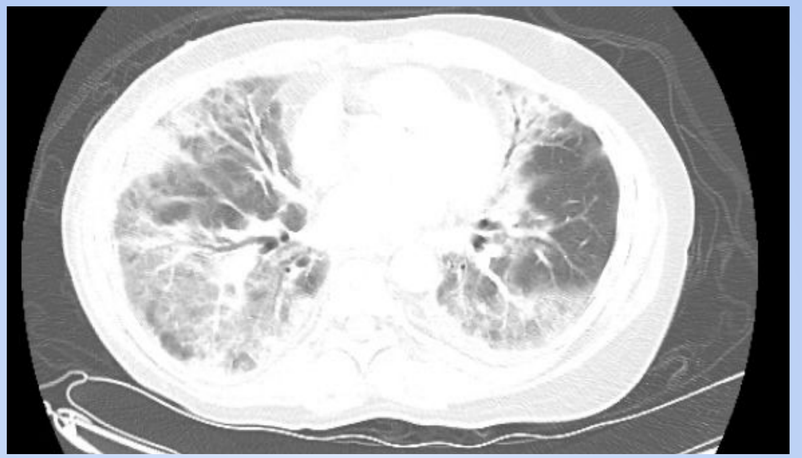

Figure 1. CT chest during first admission

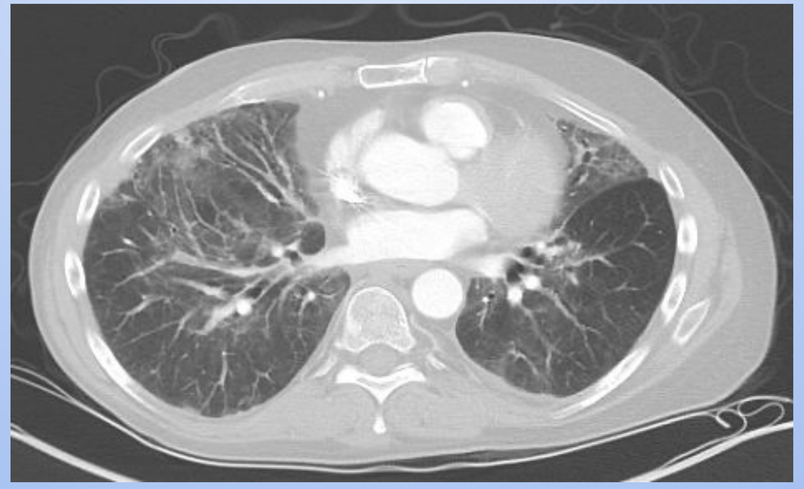

Figure 2. CT chest 3 weeks after starting therapy

Discussion

Pulmonary complications of HSCT are common. Late post-transplant pulmonary complications are defined as occurring >100 days after transplant. The predominant late pulmonary complications include cryptogenic organizing pneumonia (COP, formerly known as bronchiolitis obilterans organizing pneumonia, or BOOP), and bronchiolitis obliterans syndrome (BOS). Biopsy is gold-standard for diagnosis of late non-infectious pulmonary complications of HSCT, but may not be tolerated due to the extent of illness. In this case, the diagnosis may be made after exclusion of infectious etiologies, as treatment is pulse dose steroids (0.5mg-1mg/kg) for a prolonged period of time, followed by a slow taper. While “late onset” is defined as >100 days after transplant, our patient was 15 years post-transplant.

Conclusion

As more patients survive longer from the time of HSCT, there will be a great incidence of these patients treated in general wards and outside of highly specialized bone marrow centers, so internists should be aware of and vigilant for late-onset GVHD-associated lung disease in a patient with history of transplant and multifocal pneumonia.

References

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