Reply: The Reversed Halo Sign and the Bronchus Sign: The Eyes See Only What the Mind Knows

From the Authors:

We thank Muthu and colleagues for raising important points about the imaging. We agree with their comments. As noted, the reversed halo sign or "atoll sign" can be seen in both infectious and noninfectious conditions including invasive pulmonary aspergillosis, pulmonary mucormycosis, neoplasms, and cryptogenic organizing pneumonia (1). Although it is neither sensitive nor specific for invasive fungal organisms, the presence of this sign in a severely immunocompromised host should prompt the consideration of a fungal pathogen, especially in cases of persistent or recurrent infiltrates. Unfortunately, because the patient was not under our care at the time of the CT scans referenced by Muthu and colleagues, we cannot comment on the medical decision-making, other than to report what actually transpired (2). However, we presume that early clinical improvements on antibiotics alone, as well as negative bronchoalveolar lavage samples, led to delays in the correct diagnosis.

Muthu and colleagues suggest that early consideration of advanced bronchoscopic techniques may have afforded an earlier diagnosis. Although this is technically true, many hospitals lack the equipment or expertise to perform these procedures. Whether the patient should have been transferred to a higher level of care on his initial admission for advanced bronchoscopic biopsy is not clear, especially as expert opinion suggests that the use of bronchoalveolar lavage in patients with suspected fungal infection is a reasonable initial step (3, 4). With this in mind, we agree with Muthu and colleagues that biopsy should be aggressively pursued in patients with high clinical suspicion for invasive fungal infection, as well as in patients who demonstrate persistent or recurrent infiltrates of unclear etiology.

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

Shraddha Narechania, M.D.*
Christine E. Koval, M.D.
Neal F. Chaisson, M.D.
Cleveland Clinic
Cleveland, Ohio

ORCID ID: 0000-0002-5611-5304 (S.N.).

*Corresponding author (e-mail: drshraddhanarechania@gmail.com).

References

1 Georgiadou SP, Sipsas NV, Marom EM, Kontoyiannis DP. The diagnostic value of halo and reversed halo signs for invasive mold infections in compromised hosts. *Clin Infect Dis* 2011;52: 1144–1155.
2 Narechania S, Koval CE, Chaisson NF. A man with diabetes and nonresolving cavitary pneumonia. *Ann Am Thorac Soc* 2019;16: 626–630.
3 Glazer M, Nusair S, Breuer R, Lafair J, Sherman Y, Berkman N. The role of BAL in the diagnosis of pulmonary mucormycosis. *Chest* 2000;117: 279–282.
4 Knox KS, Meinke L. Role of bronchoalveolar lavage diagnostics in fungal infections. *Clin Chest Med* 2009;30:355–365.

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