Headcheese Sign
Bradford J. Chong, BS, Jeffrey P. Kanne, MD, and Jonathan H. Chung, MD

Appearance: The headcheese sign on chest CT is characterized by the juxtaposition of lobular regions of low, normal, and high attenuation. This results in 3 (or more) different densities on CT that are sharply demarcated from each other. The abrupt density transitions reflect the margins of secondary pulmonary lobules. Low attenuation lobules almost always reflect air trapping, which can be confirmed on end-expiratory CT. The CT imaging pattern is reminiscent of the variegated appearance of headcheese cold cut meat.

Explanation: The headcheese sign is indicative of a mixed infiltrative and obstructive process, usually associated with bronchiolitis. The ground-glass opacity (GGO) component represents the infiltrative portion of the underlying disease. Low attenuation lobules reflect obstructive small-airway disease with resultant air trapping and vasoconstriction from localized hypoxia. Air trapping varyingly limits air escape in certain parenchymal regions during exhalation, and so variable lung attenuation is especially enhanced with expiratory CT. This airway pathology contributes to the inhomogeneous attenuation pattern of mosaic attenuation.

Discussion: The headcheese sign was initially considered highly specific if not pathognomonic for subacute hypersensitivity pneumonitis (HP). However, as with most findings initially considered to be pathognomonic for a particular condition, other diseases have been shown to present with this imaging pattern. For example, sarcoidosis, atypical infections associated with bronchiolitis (such as Mycoplasma pneumonia), and respiratory bronchiolitis (RB)/desquamative interstitial pneumonitis (DIP) may also manifest with the headcheese sign. Furthermore, separate infiltrative and obstructive processes occurring together may also lead to the headcheese sign (e.g., diffuse pulmonary hemorrhage and asthma). Integrating clinical and laboratory findings may indicate the most likely diagnosis in the setting of the headcheese sign.

Chung et al showed that well-defined bronchovascular nodules and nodules along the pleural surface helped distinguish sarcoidosis from HP. Unlike HP, Pneumocystis pneumonia tends to present with interlobular septal thickening, upper lobe cysts, and associated “crazy paving pattern,” which may be superimposed on the headcheese sign. Although reports have cited mild emphysema in the upper lobes and small foci of GGOs as distinct features of RB, it can still be difficult to distinguish RB from HP.

REFERENCES