Reversed halo sign in pulmonary infarction

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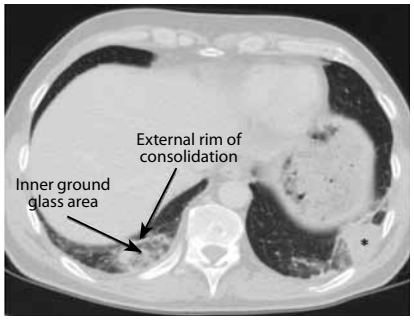

IMAGE 1. In the right lower lobe the reversed halo sign is recognized. There is a central area of ground glass attenuation surrounded by a rim of consolidation. The infiltrate abuts the pleura. The asterisk points to an area of consolidation in the left lower lobe with sharp demarcation to the adjacent lung parenchyma, abutting the pleura.

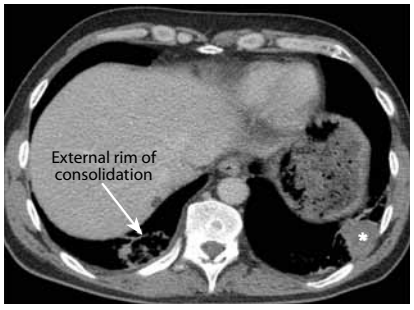

IMAGE 2. In mediastinal window, the outer rim of consolidation is clearly depicted.

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The reversed halo sign (RHS) is a focal rounded area of ground-glass opacity surrounded by a more or less complete ring of consolidation[1]. Initially, it was reported in the context of cryptogenic organizing pneumonia[2] and later was considered to be characteristic of this disease[3]. However the RHS has been described in a variety of diseases including pulmonary infarctions. Its evaluation should be made with extreme caution taking into account history, clinical examination and other radiological findings[4].

We report a case of pulmonary infarction exhibiting the reversed halo sign. In the posterior segment of the right lower lobe there is a pleural based ring shaped consolidative opacity surrounding an area of ground glass attenuation, thus creating the RHS. In the left lower lobe there is an area of consolidation with sharp demarcation to the adjacent lung parenchyma, abutting the pleura (Image 1, 2). A subsequent CTPA reveals intraluminal filling defects within the pulmonary arterial tree (Image 3). Also, the above described pleural based infiltrates at the lower lobes are significantly reduced in size while retaining their shape (melting ice cube sign) (Image 4).

Based on the pathology of pulmonary infarcts, the central area of ground glass attenuation corresponds to coagulative necrosis. In many cases the margins of coagulative necrosis are lined by collagen tissue which corresponds to the outer rim of consolidation of the reversed halo sign[5]. This collagen tissue is produced by activated myofibroblasts in the periphery of the infarction and is part of the healing process that follows a centripetal direction.

We have no conflict of interest to declare.

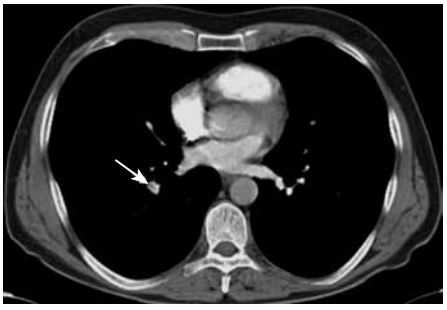

IMAGE 3. White arrow points to an intraluminal filling defect in the right lower lobe artery.

IMAGE 4. The infiltrates (asterisks) have been significantly reduced in size while retaining their shape (melting ice cube sign).

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