



High resolution computed tomography and classification of children with interstitial lung diseases

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Genet. Mol. Res. 13 (2): 4241-4251 (2014)

Received May 3, 2013

Accepted January 13, 2014

Published June 9, 2014

DOI <http://dx.doi.org/10.4238/2014.June.9.9>

ABSTRACT. High resolution computed tomography (HRCT) was used to classify children with interstitial lung diseases (ILD). Sixty children with ILD underwent HRCT in supine position under free-respiratory conditions during scanning. Children under 5 years old were sedated with chloral hydrate and the scanning scope was from the lung apex to the diaphragm. In children older than 5 years old, scans were obtained at three levels: aortic arch, tracheal carina, and 1 cm above the right diaphragm. Five infectious patients were followed up. Two experienced radiologists read the films blindly to observe the type and distribution of ground-glass opacities and bronchovascular bundle abnormalities. Bronchovascular bundles were thick in 49 patients, and were thick and stiff in 27 patients. Of the 41 infectious patients, 39 showed thickened bronchovascular bundles, and 26 showed thick and stiff bronchovascular bundles. Of the 19 non-infectious patients, bronchovascular bundles were thickened in 10 patients, and were thick and stiff in 1 patient. Forty-one patients showed lobular ground-glass opacity (32 infectious, 9 non-infectious). Twenty-seven patients showed both bronchovascular

bundle abnormality and lobular ground-glass opacity (20 infectious, 7 non-infectious). Eighteen patients showed patchy or mosaic ground-glass opacity (16 infectious, 2 non-infectious). There were 4 cases of bronchiectasis. HRCT is the first non-invasive diagnostic method for children with ILD, and its different manifestations can be classified. In early manifestation, bronchovascular bundles were abnormal and complicated with lobular ground-glass opacity. Patchy ground-glass opacity was the most common manifestation, and appeared to be difficult to disappear. Bronchiectasis indicated that the disease is irretrievable.

Key words: Children; Interstitial lung disease; High resolution CT; Disease classification