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Abstract Group: 1.5. Diffuse Parenchymal Lung Disease

Keyword 1: Interstitial lung disease **Keyword 2:** Imaging **Keyword 3:** Idiopathic pulmonary fibrosis

Title: Comet tail artifact: A transthoracic chest ultrasound sign useful in assessment of interstitial lung diseases

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Body: Objective: This prospective study was conducted to evaluate the value of comet tail artifacts (long, vertical, well-defined, hyperechoic, dynamic lines, originating from the pleural line) in assessment of interstitial lung diseases (ILD) and compare them with the findings of chest high resolution computed tomography (HRCT) and pulmonary function tests (PFT). Methods: Sixty-one patients with ILD underwent transthoracic ultrasound for assessment of the presence of comet tail artifacts and the distance between them. These findings were compared with that of chest HRCT (ground glass, reticular, nodular or honey combing) and PFT as forced vital capacity (FVC), total lung capacity (TLC), diffusion capacity for carbon monoxide (DLCO) and partial arterial oxygen pressure (PaO_2). Results: All patients had diffuse anterolateral comet tail artifacts (B lines). The distance between each two adjacent B lines correlated with the severity of the disease on chest HRCT where B3 (the distance was 3 mm) correlated with ground glass appearance and B7 (the distance was 7 mm) correlated with extensive fibrosis and honey combing. The distance between comet tail artifacts also inversely correlated with FVC ($r = -0.452$, $p < 0.001$), TLC ($r = -0.276$, $p = 0.03$), DLCO ($r = -0.445$, $p < 0.001$) and PaO_2 ($r = -0.241$, $P < 0.001$). Conclusions: Comet tail artifact, a lung ultrasound sign seems to be useful in assessment of ILD.