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Title: Diffuse alveolar hemorrhage dominant in right lung is due to cardiac comorbidity

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Body: Background: Diffuse alveolar hemorrhage (DAH) with lateral dominance, especially on the right side, is often observed in clinical practice. Aims: To describe clinical aspects of right side dominant DAH. Methods: We retrospectively reviewed data from 394 bronchoalveolar lavage fluid (BALF) specimens between January 2009 and December 2012 and patients who presented with progressively bloodier BALF were evaluated. Unilateral dominance on chest X-ray (CXR) was determined as follows: Infiltration area of the dominant side was more than twice the infiltration area of the other side. Results: A total of 43 patients were evaluated. The etiology of DAH was as follows; heart failure (n=12), clotting disorder (n=10), pneumonia (n=4), acute myeloid leukemia (n=3), vasculitis (n=2), systemic lupus erythematosus (n=2), acute exacerbation of interstitial pneumonia (n=2), drug-induced lung injury (n=1), undefined (n=7). Fifteen patients (34.9%) were right lung dominant, 3 patients (7.0%) were left lung dominant and 25 patients (58.1%) showed bilateral infiltration on CXR. Multivariate logistic regression analysis revealed that co-morbidities of cardiovascular diseases (CVD) (OR 31.9, 95% CI 1.6-2598.1), and atrial fibrillation (Af) (OR 38.4, 95% CI 2.9-2036.2) were significant factors in right lung dominant DAH. In addition, need for mechanical ventilation was a simple factor used to denote in-hospital mortality using multivariate logistic regression analysis. Conclusions: DAH dominance in right lung was significantly related to co-morbidities of CVD and Af, but not related to in-hospital mortality.