Title: Relation between vascular patterns visualized by narrow band imaging (NBI) videobronchoscopy and histological type of lung cancer

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Body: Introduction: Narrow Band Imaging (NBI) videobronchoscopy is a new technique for visualization of bronchial mucosa. It has shown to be efficient in lung cancer detection. The primary aim of this study was to evaluate relation between vascular patterns visualized by NBI as described by Shibuya and histology of lung cancer. Patients and methods: The study included 65 patients with suspected lung cancer scheduled for bronchoscopy. After identification of endoscopically visible tumor NBI was used to determine predominant type of pathological vascular pattern (dotted, tortuous, abrupt-ending blood vessels – Shibuya descriptors). Pearson's chi-square test was used to test statistical significance between vascular pattern and histological type of cancer. Results: Lung cancer was confirmed in all patients; 63.1% was diagnosed with squamous cell lung cancer (SCC), 24.6% had adenocarcinoma, 9.2% had small cell (SCLC) and 3.1% large cell lung cancer (LC). Dotted blood vessels were significantly (p<0.000) associated with adenocarcinoma, identified in 68.4% adenocarcinoma and 31.6% SCC. Tortuous blood vessels were identified in 72% SCC, 8% adenocarcinoma, 12% SCLC and 8% of LC. Tortuous blood vessels were significantly (p<0.000) associated with SCC. Abrupt ending vessels were identified in 81% SCC, 14.3% SCLC and 4.8% adenocarcinoma, this type of blood vessels was also significantly associated (p<0.000) with SCC. Conclusions: Dotted visual pattern of blood vessels identified during NBI videobronchoscopy is highly suggesting adenocarcinoma histology of lung cancer, while tortuous and abrupt ending blood vessels significantly suggest squamous cell histology of lung cancer.