European Respiratory Society
Annual Congress 2012

Abstract Number: 1697
Publication Number: P4402

Abstract Group: 11.1. Lung Cancer
Keyword 1: Bronchoscopy **Keyword 2:** Immunology **Keyword 3:** Imaging

Title: Relationship between qualitative analysis of lung tumors using integrated backscatter-intravascular ultrasound (IB-IVUS) and pathological diagnosis

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Body: Introduction or background: End-bronchial ultrasound is used by a supersonic wave image to confirm the position relations of a tumor and the participation bronchus through a bronchoscope. However, the diagnosis of the organization property of the tumor is difficult. We used integrated backscatter(IB) value which analyzed the reflection wave of the supersonic wave signal in the coronary arteries of human, and was calculated, and enabled a vascular wall organization property diagnosis. Aims and objectives: The purpose of the study measures integrated backscatter (IB) by end-bronchial ultrasound for the diagnosis of the lungs tumor and analyzes it by comparing a tumor and the distinction of the normal tissue with surgical resection. Methods: We analyzed lungs tumor and normal lungs organization provided from an operation specimen. We observed relations with the structure of the organization about the lungs tumor. Result: Surgery excision lungs tumor were 35 non-small-cell lung cancer (squamous cancer 9 examples, non-squamous cancer 26 examples). IB value showed lower value in non-small cell lung cancer tissue compaired with normal lung tissue. The necrosis had low IB value, and IB value showed a high value at fibrosis tissue. High cell density tumor showed lower IB level than low cell density tumor. Conclusion: If the distinction of the normal tissue and tumor tissue is possible and applies it to an endoscopic diagnosis by measuring lungs tumor, normal lung, IB value of the pathology organization diagnosis and invasive level of the tumor may be enabled by bronchus endoscope echo examination.