

# Acute Pulmonary Hemorrhage After Cardioversion by Direct Current Shock for Paroxysmal Atrial Fibrillation.

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Electrical cardioversion used in the various cardiac arrhythmias is a highly effective and simple procedure with infrequent complications. Acute pulmonary hemorrhage after direct current cardioversion has not been reported so far. We report a case of a 33-year-old woman who experienced pulmonary hemorrhage following cardioversion of atrial fibrillation. The patient underwent effective programmed electrical cardioversion with 70 J. Twelve hours later she presented dyspnea and hemoptysis, and arterial blood gas analysis showed hypoxia. Chest CT revealed multiple nonsegmental ground glass opacities on both lung fields compatible with pulmonary hemorrhage. She received management with ventilator in intensive care unit, and two days later weaning of ventilator was performed. The findings of pulmonary hemorrhage disappeared on follow-up CT.

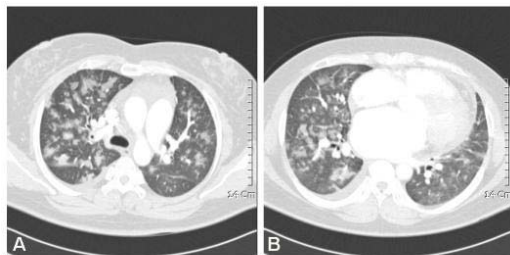


Figure 1. Chest CT shows multiple nonsegmental ground glass opacities on both lung fields (A : upper and mid lobe of lung, B : mid and lower lobe of lung)

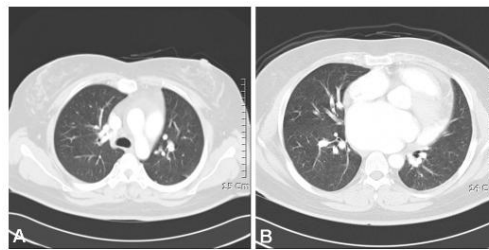


Figure 2. Follow-up chest CT eight days after management shows the findings of pulmonary hemorrhage completely resolve. (A : upper and mid lobe of lung, B : mid and lower lobe of lung)

# Non-cardiac Findings on 64-slice Cardiac MDCT comparison between Single Cardiac CT and additional Chest CT protocol

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**OBJECTIVES** 64-slice MDCT is becoming more common as a diagnostic tool for cardiac diseases. MDCT is also known to detect significant number of non-cardiac findings during cardiac work-up. However, significant non-cardiac findings might be missed when we limit field-of-view (FOV) to cardiac structure. The objective of this study was to estimate the prevalence of non-cardiac findings and risk and benefit of cardiac MDCT according to protocols. **METHODS** We enrolled 1,194 consecutive subjects (49.4±9.7 years, 62.5% men) underwent coronary artery disease screening with 64-slice MDCT. First, patients were scanned using ECG-gated coronary CT Angiography technique from the level of pulmonary arteries through the base of heart (cardiac FOV) and then additional chest scan was performed using non-gated chest CT technique from the level of thoracic inlet through kidney (thoracic FOV). We compared the frequency of non-cardiac findings and the exposed radiation dose between single cardiac CT (cardiac FOV) and additional chest CT protocol (thoracic FOV). **RESULTS** In additional chest CT protocol, total of 1,461 incidental non-cardiac findings were identified in 851 patients (71.3%). A total of 75 patients (6.2%) had clinically significant findings, requiring further diagnostic work-up: 42, non-calcified nodule < 10mm; 2, non-calcified nodule ≥ 10mm; 5, pulmonary infiltrates; 14, mass other than lung; and 12, other lesions. Four cases (0.3%) of malignancy were detected at surgically treatable stage except one case. In single cardiac CT protocol, 29 patients (38.7%) with significant lesions were missed including 3 cases of malignancy. The mean effective dose of radiation in single cardiac CT protocol (14.0±2.2 mSv) was less than that for additional chest CT protocol (20.2±2.0 mSv). The expected lifetime risk of cancer increased to 0.03% by additional scan (0.07% vs. 0.10%). **CONCLUSIONS** In a population referred for cardiac MDCT, significant non-cardiac findings (6.2%) were detected by additional chest CT protocol. Considering significant number of non-cardiac findings and acceptable radiation hazard risk, protocol with extended FOV is preferred in patient with suspected cardiac disease.