

# European Respiratory Society Annual Congress 2012

**Abstract Number:** 2718

**Publication Number:** P1499

**Abstract Group:** 4.3. Pulmonary Circulation and Pulmonary Vascular Disease

**Keyword 1:** Imaging **Keyword 2:** Circulation **Keyword 3:** Embolism

**Title:** Inventive protocols of CT pulmonary angiography (CTPA) avoid artifacts in right pulmonary artery (rPA), improving detectability of pulmonary embolism (PE)

Dr. Miho 475 Ikura mihoikura@yahoo.co.jp MD <sup>2</sup>, Dr. Hirohiko 474 Ikura hirohikoikura@yahoo.co.jp MD <sup>1</sup>, Dr. Hisayuki 476 Abe hirohikoikura@yahoo.co.jp MD <sup>1</sup>, Dr. Seiichiroh 477 Watanabe hirohikoikura@yahoo.co.jp MD <sup>1</sup>, Dr. Shin 478 Kimoto hirohikoikura@yahoo.co.jp MD <sup>2</sup> and Dr. Yohko 484 Kawawa hirohikoikura@yahoo.co.jp MD <sup>3</sup>. <sup>1</sup> Pulmonology, Radiology First Hospital, Imabari, Ehime, Japan, 794-0054 ; <sup>2</sup> Radiology, Radiology First Hospital, Imabari, Ehime, Japan, 794-0054 and <sup>3</sup> Radiology, National Cancer Center, Tokyo, Japan, 104-0045 .

**Body:** PURPOSE: A bolus injection of contrast medium (CM) in CTPA over-elevates the density in the veins. It makes too difficult to diagnose PE sometimes.

The purpose of this study is to evaluate three injection protocols for CTPA to improve the image quality of rPA. MATERIALS AND METHODS: 24 consecutive patients suspected PE underwent CTPAs using a 64-detector MDCT. Each protocol was started with a 3.5ml/sec.-injection of 100ml of CM (300mg/ml) via vein in upper limb. Three protocols followed the above CM injection, protocol-1 (P-1) with immediate exposure, protocol-2 (P-2) with exposure after 10 sec.-delayed, and protocol-3 (P-3) with exposure after injection of 30ml saline (3ml/sec.). We observed artifacts regarding rPA, subclavian veins, calcification, and motion. Then an artifact-observed score (AOS) was given 0 to 4 as artifact grade. RESULTS: Each average of AOS in rPA was 1.50 in P-1, 0.25 in P-2, and 0.13 in P-3. The AOS in P-1 was higher than the others, in P-2 ( $p=0.04$ ) and in P-3 ( $p=0.001$ ). Each average of AOS in subclavian veins and motion artifact did not differ from P-1 to P-3. The CM-density of all regions of interest in P-1 were higher than the others significantly. CONCLUSION: Two inventive protocols are useful to reduce the artifacts in rPA. They may improve detectability of thrombi in rPA in CTPA.