Researchers find a way to reduce patient radiation dose during pulmonary CT angiography

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While screening for possible pulmonary emboli using pulmonary CT angiography, a new study shows that radiologists can effectively lower the patient radiation dose by approximately 44% and improve vascular enhancement without deterioration of image quality, according to a study performed at Brigham and Women's Hospital and Harvard Medical School, Boston, MA.

A total of 400 patients believed to have a pulmonary embolism were evaluated using pulmonary CT angiography. Two hundred patients were evaluated using the standard peak kilovoltage setting of 130 or 120 kVp and the other 200 patients were evaluated using a low peak kilovoltage setting of 110 or 100 kVp. "Results showed that lowering the peak kilovoltage setting by 20-kVp lead to superior vascular enhancement without deterioration of image quality—allowing us to effectively reduce the patient radiation dose," said Shin Matsuoka, MD, lead author of the study.

"CT has become an essential tool for the diagnosis of pulmonary embolism. However because of the high percentage of negative results, radiation exposure has become an important issue. Our study shows that lowering the kilovoltage setting may be an effective method of lowering the radiation dose for most patients," he said.

"Lowering the kilovoltage setting is something that could be easily

incorporated into daily clinical practice because there is no additional equipment needed and there are no extra costs," said Dr. Matsuoka.

More information: This study appears in the June issue of the *American Journal of Roentgenology*.

Source: American Roentgen Ray Society