

Minimizing the radiation dose in coronary CT angiography using prospective ECG-triggering, low tube voltage and iterative reconstruction technologies

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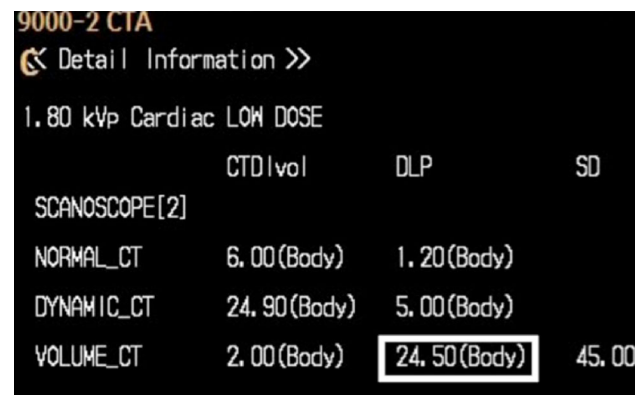
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Dear editor,

We read with interest the article by Tomizawa about radiation doses in computed tomography (CT) coronary angiography [1]. We aimed to capture a cardiac image using an effective radiation dose of 0.34 mSv, with 320-slice multi-detector computed tomography (MDCT). The coronary tree was demonstrated in detail (Fig. 1). We achieved this result using prospective ECG-triggering, iterative reconstruction and a low tube voltage of 80 kVp because the patient was so slender (Fig. 2). Scanning was performed with a minimal phase window centered at 75 %. CT coronary angiography of the heart is the fastest imaging technique in cardiovascular imaging. The major concern about this modality is the radiation exposure to the patient. The 320-slice MDCT can image the heart in one heart beat with excellent image quality and a low radiation dose. 3D images with excellent spatial resolution demonstrate the coronary anatomy very clearly. Performing prospective ECG-triggering, low tube voltage imaging in non-obese patients, and the use of iterative reconstruction technologies may help to achieve a radiation dose smaller than 0.5 mSv [2]. MDCT must be the first choice of imaging for the investigation of coronary artery disease and anomalous coronary arteries, especially in young patients.

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	CTDIvol	DLP	SD
SCANOSCOPE[2]			
NORMAL_CT	6.00 (Body)	1.20 (Body)	
DYNAMIC_CT	24.90 (Body)	5.00 (Body)	
VOLUME_CT	2.00 (Body)	24.50 (Body)	45.00

Fig. 1 The median dose length product (DLP) of this MDCT cardiac imaging was 24.5 mGy cm (white box) that corresponds to an effective dose of 0.34 mSv (conversion factor: 0.014)



Fig. 2 2D tree image of coronary artery trees

Conflict of interest The authors declare that they have no conflict of interest.

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