



We suggest that fenestrated IV catheter is useful in terms of higher vascular attenuation and lower injection pressure for coronary computed tomography angiography” Kim et al (2019).

Abstract:

PURPOSE: To compare the fenestrated intravenous (IV) catheter and nonfenestrated conventional IV catheter in terms of contrast enhancement and injection pressure for coronary computed tomography angiography.

METHODS: Three hundred patients were prospectively and consecutively enrolled to either the 20-gauge nonfenestrated conventional (group 1) IV catheter group or the 20-gauge fenestrated (group 2) or 22-gauge fenestrated (group 3) IV catheter groups. We analyzed mean vascular attenuations in the ascending aorta, left main coronary artery, left ventricular (LV) cavity, and descending aorta. Injection pressure using pound-force per square inch (PSI) and extravasation of contrast media were recorded.

RESULTS: Mean attenuations of the left main coronary artery, LV cavity, and descending aorta were significantly higher in group 2 than in group 1 ($P \leq 0.001$, $P \leq 0.001$, $P \leq 0.001$, respectively). Moreover, injection pressure was significantly lower in group 2 than in group 1 (208.3 vs 216.9 PSI, $P = 0.006$). Mean vascular attenuations of the left main coronary artery, LV cavity, and descending aorta were significantly higher in group 3 than in group 1 ($P = 0.016$, $P = 0.029$, $P = 0.001$, respectively). However, injection pressure was not statistically

significant between group 3 and group 1 (213.6 vs 216.9 PSI, $P = 0.355$). No extravasation occurred in any patient groups during the study.

CONCLUSIONS: We suggest that fenestrated IV catheter is useful in terms of higher vascular attenuation and lower injection pressure for coronary computed tomography angiography. It has a potential merit in patients with fragile and small veins.

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Reference:

Kim, J., Kim, E.J., Hur, J.H., Ham, J.O., Kim, Y.K. and Choi, S.I. (2019) The Usefulness of Fenestrated Intravenous Catheters Compared With Nonfenestrated Catheter for Cardiac Multidetector Computed Tomography. *Journal of Computer Assisted Tomography*. May 6th. . doi: 10.1097/RCT.0000000000000855.

