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Evaluation of Coronary Venous Anatomy by Multislice Computed Tomography

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ABSTRACT

Background:The coronary venous system is increasingly targeted for pacing in patients with severe heart failure. The recent advancement of Multi-Detector Computed Tomography (MDCT) allows accurate analysis of the coronary arteries, but little data exist on its role in assessing cardiac venous anatomy. The aim of the present study was to investigate the feasibility of using MDCT in evaluating the cardiac venous anatomy in patients with heart disease; **Methods and Results:** One hundred and eighteen subjects (59 ± 11 years, 100 males) were studied by contrast enhanced 16-slice CT with retrospective ECG-reconstructions. The diameter, length, and angulations of coronary veins were measured from both volume rendered 3-dimensional images and curved multi-planar images. The coronary sinus vein was visualized in all of patients. However, the posterior, postero-lateral, lateral, antero-lateral and anterior veins were found in 71.2%, 50.0%, 65.3%, 9.3% and 96% patients, respectively. Twenty-three (19.5%) subjects had neither postero-lateral nor lateral cardiac veins. The ostial diameter angle of take-off and total length of the postero-lateral and lateral veins ranged from 1.7 - 7.0 mm, 38 - 160 degrees and 2.6 - 10.6 mm, respectively; **Conclusions:** This study confirms the feasibility of assessing diameter, length, and angulations of coronary veins by MDCT. This non-invasive information should be useful for pre-operative lead placement planning for patients scheduled to have cardiac resynchronization therapy.

KEYWORDS

Cardiac Resynchronization; Coronary Vein; MultiDetector Computed Tomography

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