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LEFT ATRIAL THROMBUS DETECTION BEFORE CARDIOVERSION: CT VERSUS TEE

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Purpose: The exclusion of left atrial thrombus is essential before the electrical- or pharmacological cardioversion in patients with atrial fibrillation. In clinical practice transoesophageal echocardiography (TEE) is the reference standard method to diagnose left atrial thrombus. Our aim was to evaluate the diagnostic performance of cardiac computed tomography angiography (CTA) regarding the detection of left atrial thrombus compared to the gold standard TEE.

Methods and Materials: In total 661 patients were referred to left atrial angiography before atrial fibrillation ablation procedure between February 2011 and October 2014. We have investigated 277 patients who subsequently underwent TEE within 2 weeks after CTA (mean age=60.4±10.3; 77 female, 200 male; CHA2DS2-VASc score 1.7±1.3). We calculated diagnostic performance characteristics.

Results: CTA excluded left atrial thrombi in 254 cases. In all negative CTA cases were confirmed by TEE (true negatives). In 23 cases CTA showed incomplete contrast filling in the left appendage: 19 cases were false positives and 4 were true positives. According to our results sensitivity of cardiac CT is 100% [95% CI: 40.2%-100%], specificity was 93.0% [95% CI: 89.3%-95.8%], negative predictive value was 100% [95% CI: 98.5%-100%] and positive predictive value was 17.4% [95% CI: 5.1%-38.8%].

Conclusion: Cardiac CT is a very sensitive modality to detect left atrial thrombus, the negative predictive value proved to be 100%. In patients where cardiac CTA excludes left appendage thrombus subsequent TEE examination may be unnecessary.

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