Abstract: 549

High prevalence of intracardiac thrombi in cardiac amyloidosis

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Background: Cardiac amyloidosis (CA) has been associated with a high prevalence of intracardiac thrombi, but this was reported in small cohorts of high risk patients (with a clinical indication for transoesophageal echocardiography). It is therefore not known whether such observations are applicable to the general CA population.

Purpose: To assess the prevalence of intracardiac thrombi in patients with CA.

Methods: 324 consecutive patients with CA were studied prospectively using a standard CMR protocol at 1.5T, including early and late gadolinium imaging and T1 mapping. Early gadolinium images (segmented imaging, trigger 2) of the left atrial appendage (LAA) were acquired using a 5mm contiguous stack and a TI of 440ms.

Results: The study participants comprised 155 with light chain CA (AL), 166 with transthyretin amyloidosis (ATTR), 2 with Apo A-I, and 1 with Apo A-IV CA. The prevalence of intracardiac thrombi was 5.2% in AL, 7.2% in ATTR; 6.2% overall. 90% of thrombi were in the LAA. This was higher when there was atrial fibrillation (9.1% AL, 14.3% ATTR) but intracardiac thrombi were also present in sinus rhythm (SR) 3.1% (4.5% AL, 1.1% ATTR). In all patients with AF the thrombi were present despite long term anticoagulation. The presence of intracardiac thrombi was associated with a greater degree of systolic dysfunction and myocardial amyloid infiltration (higher native T1 and ECV).

Conclusions: The prevalence of intracardiac thrombi in CA and AF is high despite long term anticoagulation, with significant thrombus prevalence even in SR, meriting vigilance for intracardiac thrombi in all. CMR with early gadolinium imaging of the LAA is a valuable screening tool for thrombi in the LAA and should be routine part of the clinical protocol when amyloidosis is suspected. Current guidelines for electrical cardioversion after prolonged anticoagulation without screening for thrombus in the LAA should not be applied to patients with CA.
Background: Cardiac amyloidosis (CA) has been associated with a high prevalence of intracardiac thrombi, but this was reported in small cohorts of high risk patients (with a clinical indication for transoesophageal echocardiography). It is therefore not known whether such observations are applicable to the general CA population.

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Methods: 324 consecutive patients with CA were studied prospectively using a standard CMR protocol at 1.5T, including early and late gadolinium imaging and T1 mapping. Early gadolinium images (segmented imaging, trigger 2) of the left atrial appendage (LAA) were acquired using a 5mm contiguous stack through the LAA (top row) and an inversion time of 440ms to confirm the presence or absence of thrombus vs normal pectinate muscle. The thrombus in the left atrial appendage can only be visualised in the last two images (red arrows in panel 4 and 5) and could have been missed with the acquisition of only one image.

Conclusions: The prevalence of intracardiac thrombi in CA and AF is high despite long term anticoagulation, with significant thrombus prevalence even in SR, meriting vigilance for intracardiac thrombi in all. CMR with early gadolinium imaging of the LAA is a valuable screening tool for thrombi in the LAA and should be routine part of the clinical protocol when amyloidosis is suspected. Current guidelines for electrical cardioversion after prolonged anticoagulation without screening for thrombus in the LAA should not be applied to patients with CA.