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*Publication date:*
2018

*Document Version*
Publisher's PDF, also known as Version of record

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## The role of echocardiography and cardiac magnetic resonance in decision making on cardiac surgery in a patient with cardiac tumour

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## Background

Accurate diagnostic evaluation of cardiac tumours remains a clinical challenge. Cardiac surgery without pre-operative precise diagnosis could have disastrous consequences for the patient. The diagnosis and decision on cardiac surgery is usually based on the morphological findings on echocardiography without further additional imaging modalities. Although cardiac magnetic resonance (CMR) is a well-established non-invasive imaging modality, statement on the role of CMR in this field is lacking.

## Purpose

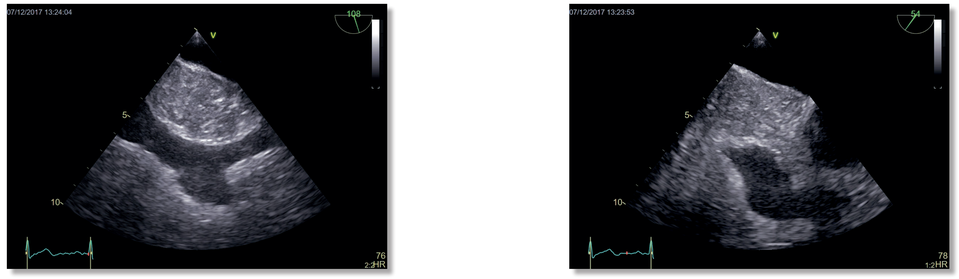
We present a clinical case where CMR had crucial importance in decision making on surgical removal in a patient with a cardiac mass. The scheduled cardiac surgery on assumed myxoma was withdrawn because of pre-operative CMR-findings.

## Methods & Results

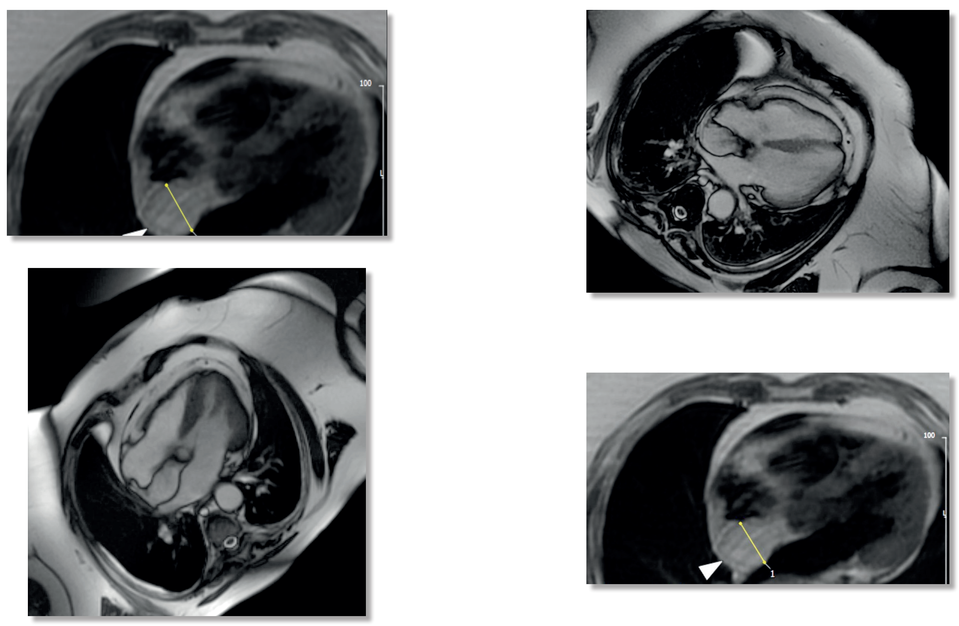
67 years old female without previous cardiac history was admitted with palpitations. Electrocardiogram showed regular supraventricular tachycardia at a ventricular rate of 213 bpm. Conversion to sinus rhythm was achieved by intravenous administration of 300mg Amiodarone. Transthoracic echocardiogram and subsequent transoesophageal echocardiogram showed a solid mass sized 5 x 3 cm in the right atrium attached to the intra-atrial septal wall. There was no affection of the tricuspid valve and no hemodynamic obstruction of the atrial cavity, inferior, or superior caval vein. Left ventricular function, right ventricular function, and all heart valves were without pathological findings. The tumour was reported as a right-sided myxoma and the patient was referred to cardio-thoracic surgery. There was no evidence of embolic phenomena. The episode of supraventricular tachycardia was concluded to be the first and single symptom of the tumour.

To rule out the presence of coronary stenosis prior to cardiothoracic surgery, coronary CT-angiography was performed concluding normal coronary arteries. Second review of the echocardiographic images at the heart team conference drew attention to the tumour`s broad based attachment to the intra-atrial septal wall, reduced mobility and absence of a narrow stalk. CMR was requested. CMR with T1- and T2-weighted images including fat suppression and gadolinium-based contrast revealed that the solid mass consisted of widespread lipomatous hypertrophy of the intra-atrial septum due to fatty infiltration. The scheduled surgery was cancelled. The patient started oral anticoagulation therapy and treatment with beta-blocker. It was decided not to perform radiofrequency ablation procedure.

**Transoesophageal images of Lipomatous hypertrophy of the intra-atrial septum**




**CMR images of Lipomatous hypertrophy of the intra-atrial septum**



## Conclusion

CMR provides paramount information on the diagnostic accuracy of cardiac tumours and determines the choice of cardiac surgery. Exact pre-operative diagnosis can avoid unnecessary cardiac surgery. Currently, there is no official statement on the role of different cardiac imaging modalities in diagnostic evaluation of cardiac tumours. Meanwhile, CMR should be considered as a routine supplemental imaging modality in the assessment of patients with cardiac mass.

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