



EDITORIAL

Extracardiac findings in cardiovascular magnetic resonance. A scientific curiosity or a real need?

**KEYWORDS**

Cardiovascular
magnetic resonance
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Extracardiac findings

The main objective of a CMR scan is to acquire specific imaging planes orientated to the heart.^{1,2} However, the initial axial and/or coronal images of the thorax and upper abdomen are also acquired and often lead to the imaging of substantially more regions than the heart. Most incidental extra-cardiac findings have no clinical relevance and include anatomic variations or benign lesions, such as cysts. However, these findings could represent clinically significant pathologies in preclinical stages. The early diagnosis of such incidental pathologies (e.g., gall stones, kidney or lung tumor) might prevent their progression and lead to better prognosis. Conversely, further investigation of an incidental benign lesion might lead to unnecessary examinations and significant increases of health care costs. Therefore, it is necessary to reliably discriminate between significant and insignificant extracardiac findings (ECF) to determine the need for further evaluations.

The study by Ulyte et al. reported that ECF were documented in 5.3% of CMR cases. The data revealed that approximately one-quarter of ECF were clinically significant in the follow-up and that the overall prevalence in CMR was 1.3%. ECF were also rated according to their clinical significance to highlight relatively rare ECF that were clinically significant and associated with grave or urgent conditions, such as adrenal pathology, renal

masses, and pulmonary nodules. However, the majority of ECF were less important and were associated with a benign diagnosis.

A recent meta-analysis of 12 studies including data from 7,062 patients demonstrated that there was a 35% pooled prevalence of incidental extracardiac findings. The extracardiac findings resulted in a change of management in 1 % of patients undergoing CMR,³ which is important for a busy CMR unit. In these cases, the readers' training in the evaluation of extracardiac structures significantly increased the reported prevalence.³ The findings may require additional confirmatory imaging due to the incidental nature of the findings and their non-dedicated imaging. Furthermore, the presence of certain extracardiac findings can significantly contribute to the interpretation of the primary cardiac pathology because several cardiac diseases may also present systemic involvement.⁴

The current study by Ulyte et al. also emphasized that although incidental findings outside the cardiovascular magnetic resonance scan are quite rare there is a clinically significant fraction. These patients could require further investigations that might change the diagnosis. Therefore, the assessment and detailed evaluation of these lesions should not be underestimated.

The reliable diagnosis of ECF during the CMR examination has been used as a strong argument for collaborative diagnosis of CMR scans by both a cardiologist and a radiologist. Radiologists are considered to be more "sensitive" in diagnosing ECF. CMR scans are reported by cardiologists, radiologists, or a collaborative team depending on the institution and the country. A proper interpretation of CMR studies requires excellent knowledge of anatomy and familiarity with normal anatomical variants of other organs in addition to the heart imaged within the CMR study. These skills are independent of the physician's specialty. The importance of incidental non-cardiovascular lesions was recognized in the recent update to the European

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Association of Cardiovascular Imaging core syllabus for the European CMR certification exam.^{5,6}

A reliable diagnosis of extracardiac lesions is a real clinical need and deserves the best of our diagnostic capability. Both cardiologists and radiologists should be well trained in the diagnosis and clinical significance of these lesions. However, a “creative collaboration” involving both specialties offers the maximum diagnostic benefit.

Conflict of interest

There is no conflict of interest related to this work.

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