

Meeting abstract

305 Is real-time CMR really sensitive and specific for pericardial constriction?

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Introduction

CMR has excellent ability to detect the anatomical changes of pericardial thickening. It has been proposed that the physiological changes of constriction manifested by ventricular:ventricular interaction are also well detected using real-time dynamic CMR during inspiration/expiration.

Hypothesis

That real-time dynamic CMR would be sensitive and specific for pericardial constriction.

Methods

42 consecutive patients referred for CMR without any clinical/echo/MRI features of constriction were compared with 8 individuals confirmed operatively to have had constriction using real-time SSFP cine imaging during inspiration/expiration in a short axis view.

Results

88% (7 of 8) of confirmed constriction patients vs 5% (2 of 42) patients without constriction had marked septal flattening ($p < 0.001$). The accuracy, sensitivity and specificity were 83%, 78% and 83% respectively, Figure 1. Compared to the average control population, the 2 non-constriction patients with marked septal flattening were younger (38 vs 61, $p < 0.001$) and were both endurance athletes. 12% (5 of 42) of patients without constriction had subtle septal flattening (arbitrarily defined as an inspiratory septal deviation away from baseline of less

than the thickness of the septum). The one constriction patient without marked septal flattening was complex with additional pathology (anomalous systemic and pulmonary venous drainage), raising doubts about the surgical gold-standard chosen.

Conclusion

Real-time dynamic CMR is indeed highly sensitive and specific for pericardial constriction provided that a) the septal flattening is marked and b) the individual under investigation is not a young athlete, where marked dynamic septal flattening can be normal.

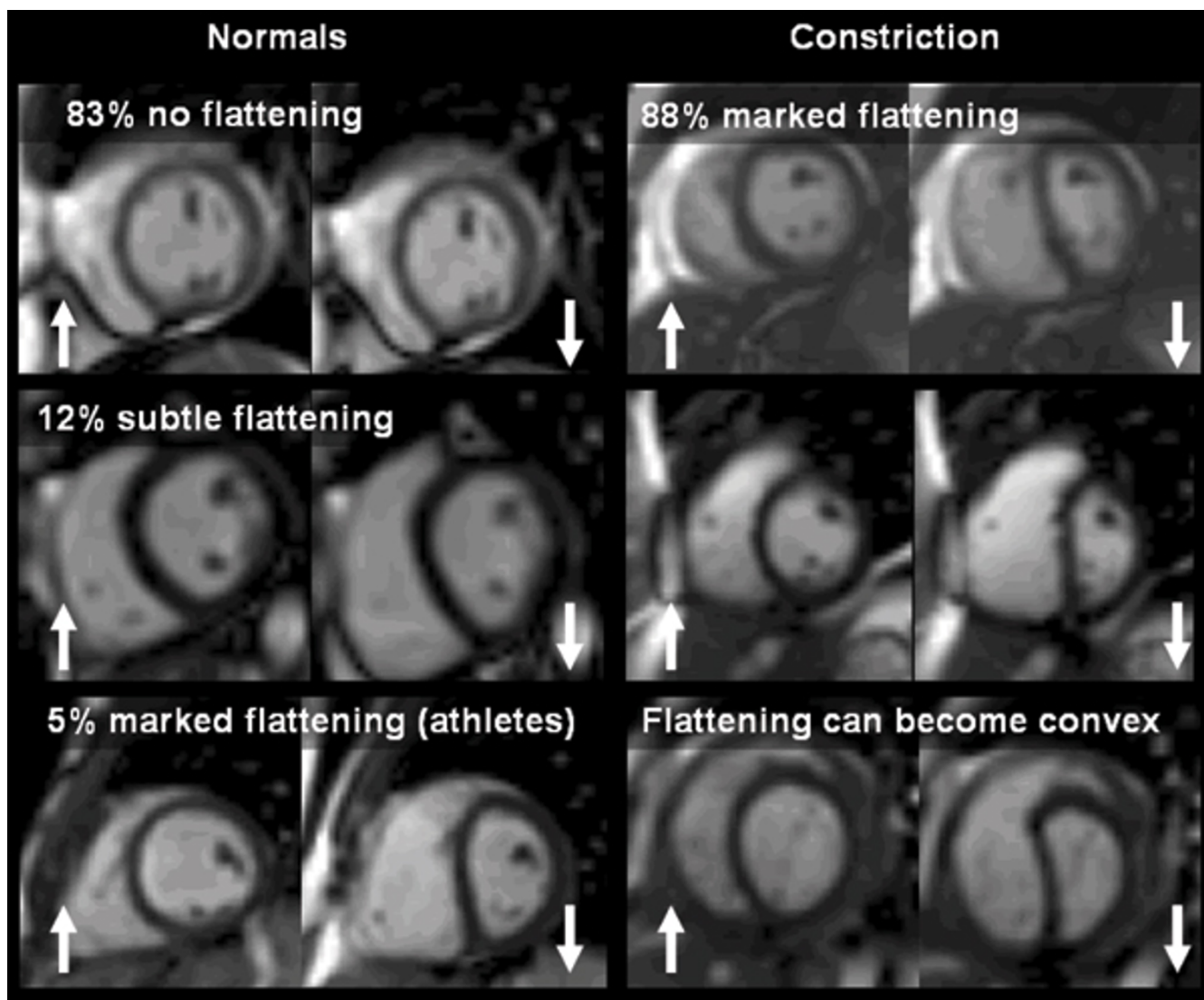


Figure 1
 Real-time dynamic CMR is indeed highly sensitive and specific for pericardial constriction provided that a) only marked septal flattening is counted and b) the individual under investigation is not an athlete, where marked inspiratory septal flattening can be normal.

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