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Titel des Beitrags: Molecular magnetic resonance imaging of atrial clots in a swine model.

Abstract:
BACKGROUND: The detection and differentiation of intracardiac masses is still challenging and may include neoplasms and thrombi. The aim of this study was the investigation of a targeted, fibrin-specific contrast agent (EP-2104R) for molecular targeted magnetic resonance imaging (MRI) of left atrial clots. METHODS AND RESULTS: Chronic human thrombi were surgically implanted in the left atrial appendage of 5 swine. Molecular MRI was performed with a navigator-gated, free-breathing, cardiac-triggered 3D inversion-recovery, black-blood, gradient-echo sequence before and after systemic administration of 4 micromol/kg EP-2104R. MR images were analyzed by 2 investigators, and the contrast-to-noise ratio was calculated. Location of clots was confirmed by autopsy, and the gadolinium concentration in the clots was assessed. Before contrast agent administration, thrombi were not visible on black-blood MR images. After contrast administration, all atrial clots (n=5) were selectively visualized as white spots with a high contrast-to-noise ratio (clot/blood, 29.7 +/- 8.0). The gadolinium concentration in the clots averaged 74 +/- 45 micromol/L. CONCLUSIONS: The fibrin-specific MR contrast agent EP-2104R allows for selective and high-contrast visualization of left atrial clots by means of molecular targeted...