
MATERIAL AND METHODS: Fresh ex vivo engineered thrombi (human blood) and human clots removed from patients were delivered in 11 swine. Molecular MR imaging with a 3D gradient-echo (3D fast field echo (3DFFE)) sequence and a navigator-gated and cardiac-triggered 3D inversion-recovery black-blood gradient-echo sequence (IR) was performed before thrombus delivery, after thrombus delivery but before contrast media application, and 2 hours after i.v. administration of 4 micromol/kg EP-2104R. MR images were analyzed by 2 investigators and contrast-to-noise ratio (CNR) was assessed. Thrombi were removed for assessment of gadolinium (Gd) concentration. RESULTS: Only after contrast media application were pulmonary emboli [freshly engineered thrombi (n = 23) and human clot material removed from patients (n = 25)] visualized as white foci on MR images. CNR was 13 +/- 3 (ex vivo engineered clot) and 22 +/- 9 (patient clot material) for the fast field echo (FFE)-sequence and 29 +/- 9 (ex vivo engineered clot) and 43 +/- 18 (patient clot material) for the IR-sequence,
respectively. A high Gd concentration in the clots was found (82 +/- 43 microM for the freshly engineered and 247 +/- 44 microM for the clots removed from patients, respectively).