

## **AN ANIMAL MODEL OF CHRONIC ISCHEMIC MITRAL REGURGITATION**

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### **Objectives**

Ischemic mitral regurgitation (IMR) develops in 20 % of patients after acute myocardial infarction and carries an increased long-term mortality. Insights into the mechanisms of IMR have mainly been provided by work in animal experimental models of acute IMR. The purpose of this study was to develop such a model for investigation of chronic IMR.

### **Materials & Methods**

The left circumflex coronary artery was occluded by intracoronary coiling in eleven 50 kg female Landrace/Yorkshire pigs. This was followed by a rapid-pacing protocol. Cardiovascular magnetic resonance imaging was used to quantify the mitral insufficiency. Eight pigs served as controls.

### **Results**

Six pigs survived the six week follow-up period. Of these, four had an inferior wall infarction and significant IMR, one pig had an incorrect placement of the coil in a small intermediate branch and no IMR, and one had a correct placement of the coil, but reperfused with only a small subendocardial inferior infarction and no IMR. None of the pigs in the control group developed IMR.

### **Conclusions**

A catheter-based pig-model for chronic IMR has been established, but the occlusion method should be optimized in order to ensure adequate infarction. Establishment of this model provides a platform for investigation of chronic IMR and for evaluation of innovative surgical approaches to reverse LV remodelling and to identify potential geometric targets of chronic IMR.