Asynchronous contrast echocardiography allows to identify and quantify myocardial perfusion abnormalities produced by graded coronary stenoses (CAS). To test this in humans, we studied 23 patients (64 ± 9 years) with normal left ventricular function undergoing coronary angiography. Rest and dipyridamole (0.84 ml/kg) power modulation RT-MCE data were compared with % luminal diameter stenosis from quantitative coronary angiography. Coronary occlusions resulted in a gradual decrease in the thickness and brightness of the bright band in the LAD territory, concurrent with hypokinesis noted in dynamic images. These changes resolved during reperfusion. Segments in the LAD territory showed a gradual decrease in wall motion index, with no changes noted outside LAD territory (figure, right). Conclusion. Parametric imaging provides a still-frame display of regional LV wall motion sensitive enough to visualize regional hypokinesia. Computer analysis of parametric images allows quantitative evaluation of regional LV wall motion.

### ORAL CONTRIBUTIONS

#### 864 Clinical Studies of Myocardial Contrast Echocardiography

**864-1** Delineation of the Physiological Significance of Human Coronary Stenoses by Real-Time Myocardial Contrast Echocardiography

**Marcel Petit**, David Vancaeynste, Agnès Pasquet, Anne-Marie d’Hondt, Jacques Melin, Jean-Louis Vanoverschelde, Université Catholique de Louvain, Brussels, Belgium.

Recent experimental studies have indicated that low mechanical index real-time myocardial contrast echocardiography (RT-MCE) allows to identify and quantify myocardial perfusion abnormalities produced by graded coronary stenoses (CAS). To test this in humans, we studied 23 patients (64 ± 9 years) with normal left ventricular function undergoing cardiac catheterization. Rest and dipyridamole (0.84 mg/kg) power modulation RT-MCE data were compared with % luminal diameter stenosis from quantitative coronary angiography. At baseline, wall motion index (WMI) and myocardial blood flow (MBF) averaged 0.79 ± 0.05 cm/s, 10.1 ± 1.0, and 2.5 ± 0.6, respectively, and were similar among vascular territories with and without coronary stenosis. With dipyridamole, hyperemic WMI progressively decreased with the severity of CAS (from 0.79 ± 0.20, 0.69 ± 0.12, 0.44 ± 0.10, and 0.34 ± 0.09 cm/s, in <50%, 50-70%, 70-90%, and