We studied the reversibility of left ventricular asynergy in 37 patients with aorto-coronary bypass surgery (ACB). Fifty-four revascularized regions were assessed using exercise Thallium scintigraphy (Ex-SG), left ventriculogram (LGV) and coronary arteriogram (CAG) before and after ACB. LGV before ACB showed 32 asynergic regions; 12 were infarcted area and 20 were non-infarcted area. In 9 of the former (75%) and in 16 of the latter (80%) asynergy improved after ACB. Preoperative Ex-SG showed significant redistribution in these asynergic regions, especially in the infarcted area. In patients with no previous myocardial infarction, Ex-SG did not show complete redistribution in these asynergic regions preoperatively. However, perfusion defect completely disappeared postoperatively. CAG showed severely jeopardized coronary perfusion in these asynergic regions. These findings suggest that if Ex-SG shows significant redistribution in asynergic region perfused by jeopardized coronary artery, chronic ischemia is responsible for the asynergy and that wall motion can be restored by ACB in these regions.