Introduction: MediGuide technology has applied 3D visualization and navigation by Ensite Velocity System to a pre-recorded 2D X-ray image to create a real time navigation and ablation without use of fluoroscopy.

Methods: We implanted cardiac resynchronization therapy (CRT) using by MediGuide technology.

Result: A 75 years old underwent VVI pacemaker implantation due to bradycardia with atrial fibrillation 6 years ago. He had felt dyspnea, and left ventricular (LV) ejection fraction was reduced to 26% assessed by echocardiography. His Holter ECG and interrogation of pacemaker revealed no evidence of ventricular tachycardia. He underwent CRT upgrade implantation. We introduced a sheath using by fluoroscopy. After recording of 2D X ray, and we introduce CS catheter using by livewire and MediGuide. We confirm coronary vein branch using by contrast agents and fluoroscopy, and introduce LV lead using by MediGuide system. We successfully perform CRT upgrade, his symptom was improved, and LV ejection fraction assessed by echocardiography improved to 36%, and LV systolic volume reduced from 118.2ml to 87.7ml.

Conclusion: MediGuide technology was useful to adding LV lead during CRT upgrade operation for reduction of fluoroscopy.