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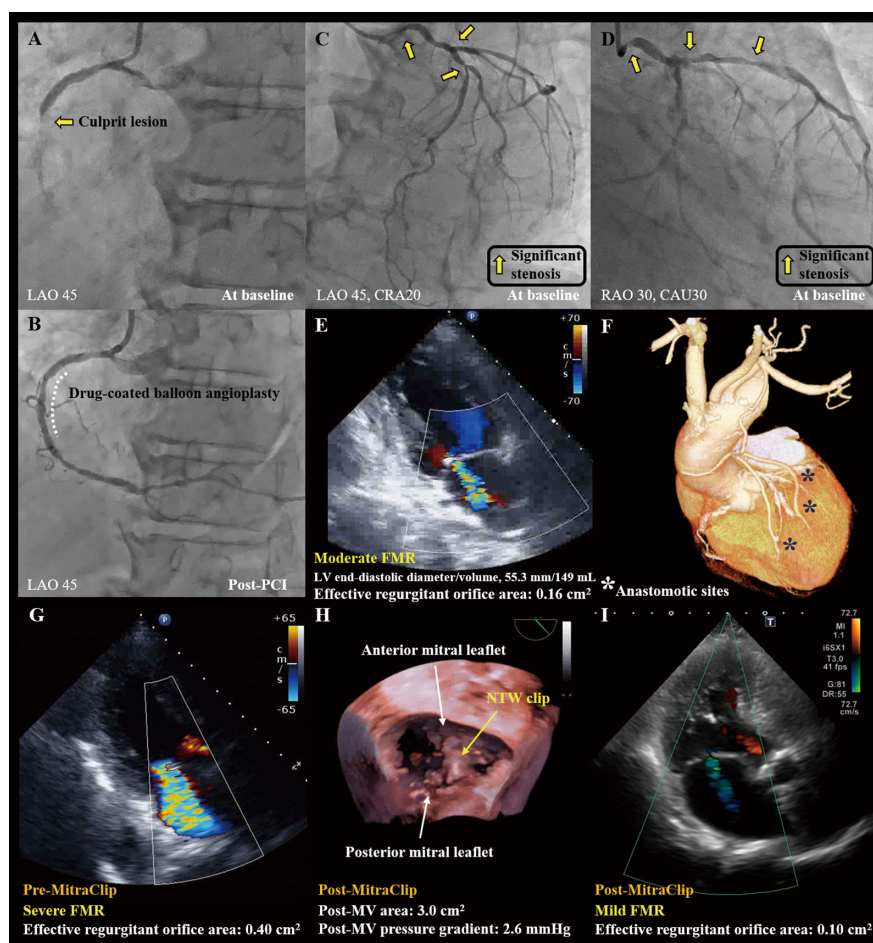
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# MitraClip as Last-Resort Interventional Therapy for Refractory Mitral Regurgitation After Complete Revascularization for Acute Myocardial Infarction

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**Figure.** (A–D) Coronary angiography. CAU, caudal; CRA, cranial; LAO, left anterior oblique; PCI, percutaneous coronary intervention; RAO, right anterior oblique. (E,G) Transthoracic echocardiography (TTE) before MitraClip implantation showing moderate (E) and severe (G) functional mitral regurgitation (FMR). LV, left ventricle. (F) Computed tomography angiography after coronary artery bypass grafting (CABG). (H,I) Transesophageal echocardiography and TTE after MitraClip implantation. MV, mitral valve.

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A 78-year-old man with inferior ST-segment elevation acute myocardial infarction (AMI) underwent emergency percutaneous coronary intervention with intra-aortic balloon pump support (peak creatine kinase: 1,429 IU/L; **Figure A–D**). Transthoracic echocardiography showed diffuse hypokinesis with a left ventricular ejection fraction of 30%, ischemia-related leaflet tethering-induced moderate functional mitral regurgitation (FMR) and preserved right ventricular function (**Figure E**). Three days later, deterioration in myocardial ischemia due to heavily calcified stenoses in the left main trunk ostium resulted in unstable hemodynamics. After confirming anatomical eligibility for future MitraClip therapy, we elected to perform the less-invasive off-pump coronary artery bypass grafting (CABG) alone to resolve the ischemia (**Figure F**). However, acute infection on Day 6 after a successful procedure resulted in deterioration in FMR-related heart failure that required ventilation therapy. Although inflammation improved on Day 11 after CABG, FMR was exacerbated by many factors, including a deterioration in the patient's general condition and increased cardiac preload, thereby resulting in difficulty discontinuing dobutamine and weaning off the ventilator (**Figure G**). Because of difficulties with further medical intervention and higher

surgical risk (Society of Thoracic Surgeons score=33%), MitraClip therapy was performed as the last resort. One MitraClip G4 NTW was implanted, which successfully reduced the FMR to mild (**Figure H,I**). Shortly thereafter, the patient was weaned off dobutamine, and optimal medical therapy (OMT) was then administered. The patient was discharged on Day 16 after MitraClip implantation. No further deterioration occurred for 6 months.

Management of severe refractory FMR in the acute post-AMI phase is challenging. Unstable hemodynamics caused by post-AMI-related severe FMR may disrupt not only the achievement of OMT, but also the patient's discharge. Our report suggests that MitraClip therapy for post-AMI-related refractory FMR following complete revascularization may be effective in improving short-term outcomes and enabling OMT. MitraClip therapy may be an acceptable last resort for FMR presenting in the acute post-AMI phase, in which the potential for inferior myocardial salvage is difficult to evaluate, especially in cases of hemodynamic instability, high surgical risk, and suitable mitral valve anatomy.

### Disclosures

None.