

DCA

Hideo Tamai, M.D. Shiga Medical Center for Adults

When we perform PCI for LMT, the procedure often causes a fall of blood pressure and easily leads to the heart failure and fatal arrhythmia, especially for the patients with poor LV function. Therefore, we generally use IABP and temporary pacing during the procedure. As for devices, we choose DCA for the main device and when the result is insufficient because of dissection, severe calcification and so on, we deploy stents additionally.

PCI for the ostial lesion of LMT

It is difficult to cut the atheroma of LMT ostial lesion sufficiently compared with that of LMT distal lesion. When the cut of atheroma is insufficient, we use stents in order to gain bigger lumen and to prevent elastic recoil. DCA was performed according to the IVUS guidance, and we cut only the atheroma intentionally. To grasp the position/orientation of the atheroma accurately, we make a pin hole by a needle about 2 mm proximal to the tip of guiding catheters. And utilizing this hole as the marker, we decide the position and direction of the atheroma that should be cut. This technique enables us to lessen the risk of coronary perforation by the cutting of normal coronary artery. To obtain better clinical outcome, it is necessary to gain as big lumen as possible. So it is often that we add over 80PSI to the balloon of Flexicut L (over 60PSI to the balloon of 7FG atherocathe). As for the severely calcified lesion or the lesion in which elastic recoil is strong, the residual stenosis often remains. In these cases, deployment of stents is inevitable. The maximum diameter of stents generally used, 4.0 mm, is insufficient for LMT, therefore, we dilate the stents using a 5.5-6.0mm balloon. The deliberate positioning of stents is important because it is necessary to prevent the occlude the ostium of LCX. In order to cover the ostial lesion of LMT by the stents, it is inevitable that the part of the stent protrude to the aorta. we deploy the stents in the ostial lesion of LMT, we dilate the balloon where part of the protrude to the aorta, and we push the dilated balloon downward to attach the stent to the wall of aorta. This method minimizes the risk of deformation of stents by the catheter when re-angiography or re-PTCA is performed.

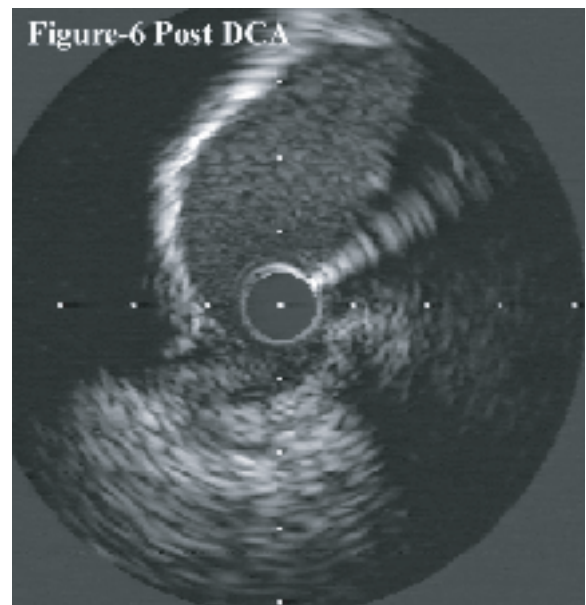
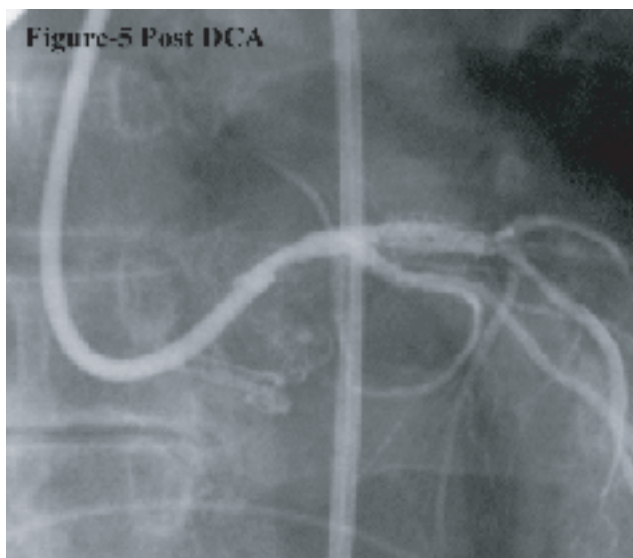
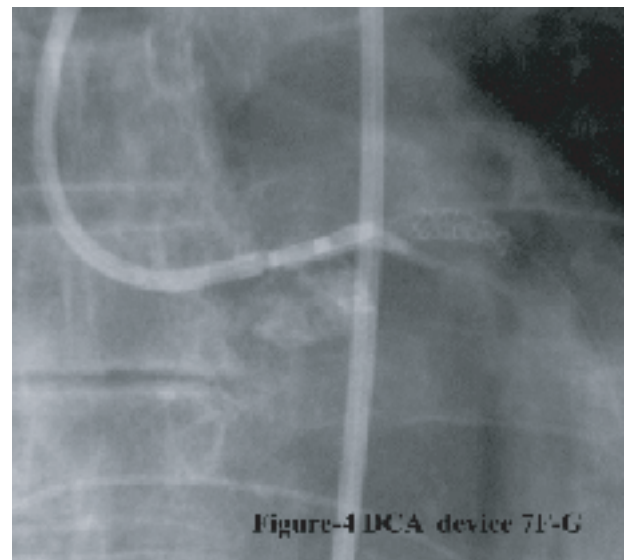
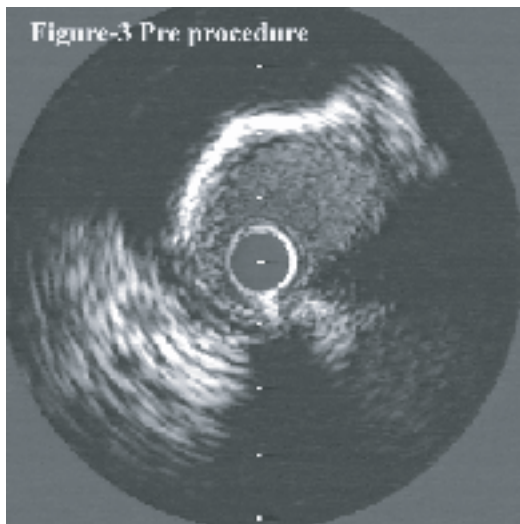
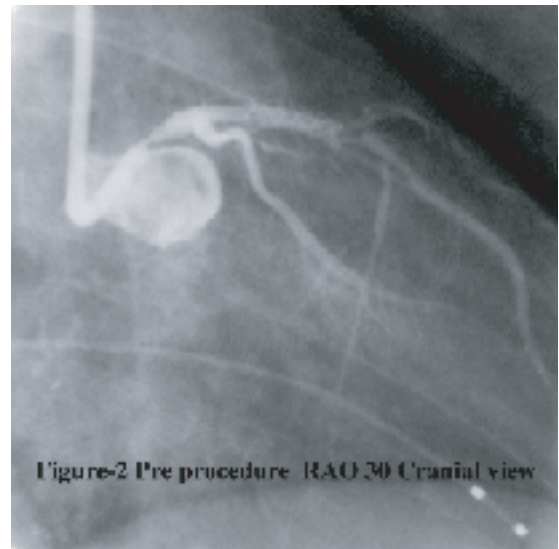
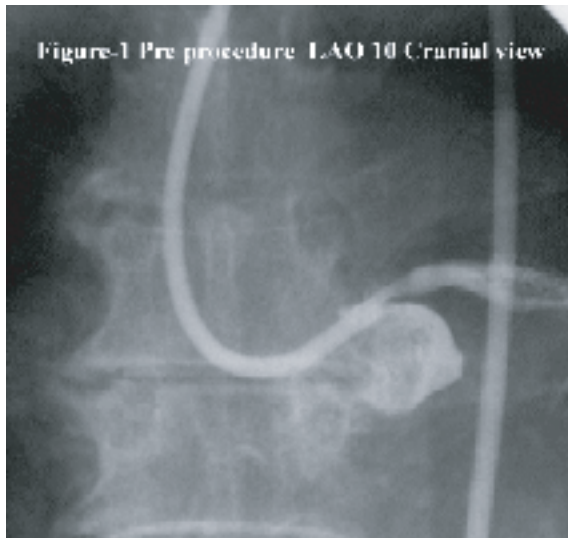
Case 1

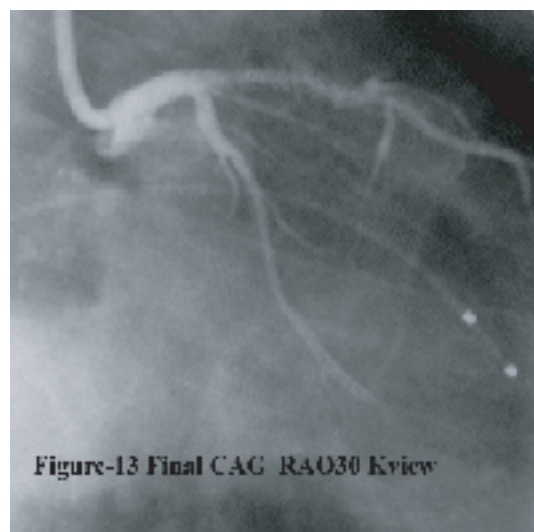
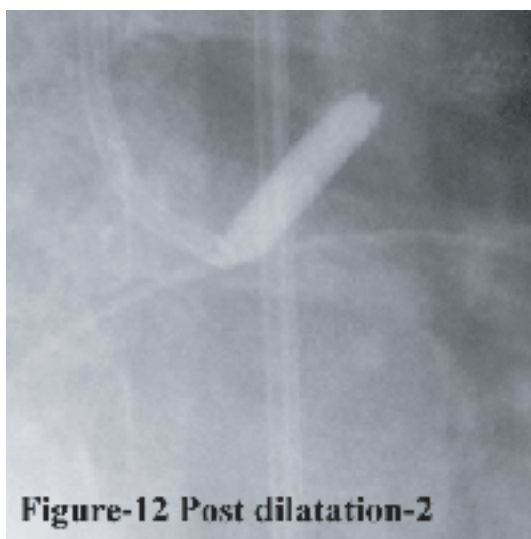
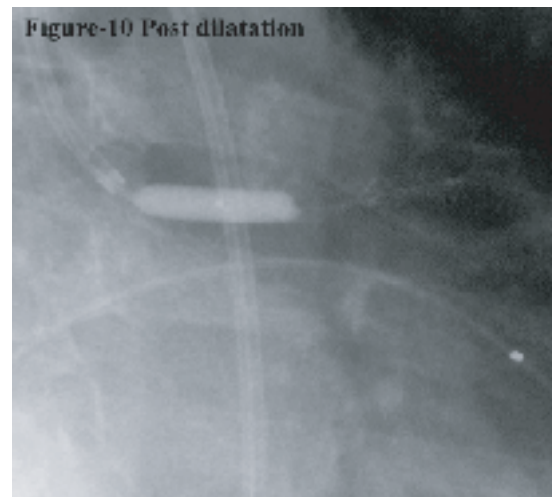
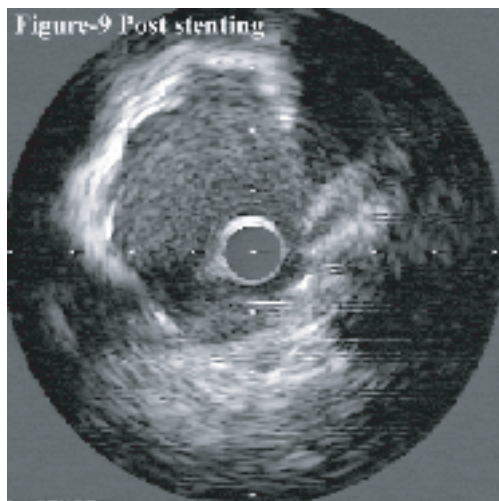
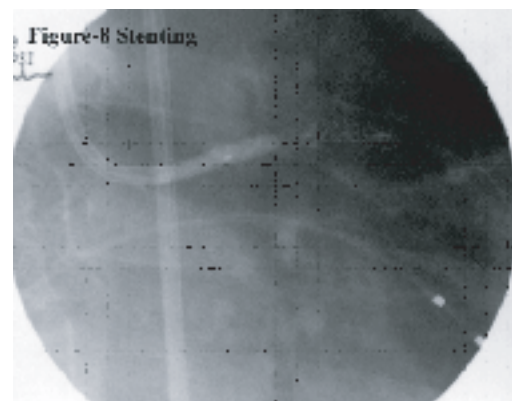
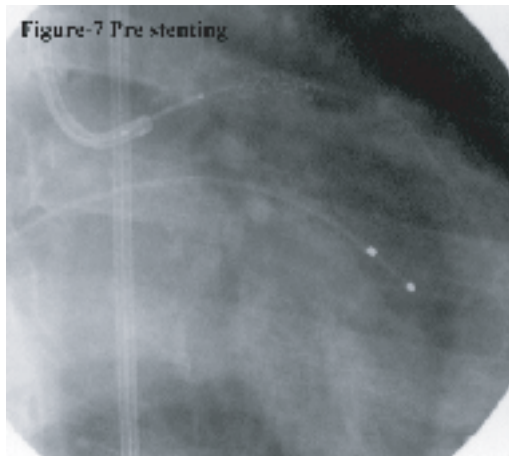
75 y.o., male

Clinical diagnosis; effort angina pectoris

Target lesion; LMT 75% stenosis

Figure 1,2 shows the angiogram before PCI. At first, we performed IVUS and found an eccentric lesion with calcification (Figure 3). Next, we carried out DCA using 7F graft atherocathe (max 60psi) (Figure 4). Because the lesion contained calcification and we were not able to obtain sufficient lumen (Figure 5,6), we deployed Palmaz-Shatz stent (4.0mm) deliberately. (Figure 7). The full dilatation with the stent delivery balloon could not be achieved, therefore we used another 4.0 mm balloon and added high pressure post-dilatation (Figure 8). After the high pressure post-dilatation, we conducted IVUS and found inadequate dilatation (Figure 9). So, we dilated stents by 5.5mm balloon for vein grafts intensively (Figure 10) and pushed the dilated balloon to attach the protruded stent strut to the wall of aorta (Figure 11). Final angiogram (Figure 12) and IVUS (Figure 13) showed an optimal result.





Case 2

69 y.o., male

Clinical diagnosis; effort angina pectoris, post CABG

Target lesion; LMT, LAD seg7, LCX seg11, 13

Figure 16, 17 show the angiogram before PCI. At first, we performed IVUS and found an eccentric lesion with negative vessel remodeling (Figure 18). Next, we carried out DCA using 7F graft atherocathe (Figure 19). Because we were not able to obtain sufficient lumen after DCA (Figure 20, 21), we deployed NIR stent (4.0mm-9mm) (Figure 22). The angiogram and IVUS after stenting (Figure 23, 24) revealed unsatisfactory dilatation, therefore we dilated stents by 5.0mm balloon for vein grafts and pushed the dilated balloon to attach the protruded stent to the wall of aorta (Figure 25). After that, we performed PCI for LAD and LCX. Final angiogram and IVUS showed a satisfactory result (Figure 26-28).

