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A case of successful bailing out from stent deformation during PCI for RCA-CTO lesion

We experienced a case of severe stent deformation using a mother-child technique after post-dilation with a large-caliber balloon catheter. This case was a 57-year-old male. Target lesion was CTO lesion at the proximal RCA. At first we tried to perform PCI via the retrograde approach. The retrograde guide wire could be passed into the PD branch through the septal branch but it could not be advanced into the distal cap of CTO. Then the guide wire was placed from the PD branch into the AV branch as a marker. Next, we exchanged to antegrade approach. The antegrade guide wire was successfully advanced into the AV branch through the CTO lesion. Three Promus Element stents (3.5x24mm, 3.5x38mm, 3.0x38mm) were deployed from the proximal site of the distal RCA bifurcation to proximal RCA. We could recognize separation of the struts around the proximal stent-overlap site fluoroscopically after post-dilation with a 4.5mm balloon catheter. Another guide wire could be advanced into the PD branch. However it is difficult to deliver a 2.5x16mm Promus Element stent into the PD branch without a child catheter. Unfortunately, using the child catheter, severe stent deformation occurred around the proximal stent-overlap site. The difference of the stent longitudinal strength between overlap site and non-overlap site might be contributed to the deformation. We think that the mechanism of this complication was not only compressive deformation with the inner catheter but also dilative deformation with the large-caliber balloon catheter at the stent-overlap site. Fortunately, we overcame this critical situation.