

[Introduction] Isolated side branch ostium stenosis is a challenging lesion for interventional cardiologist. There has been no consensus to tackle this type of lesion. This case illustrated a novel strategy to treat the MEDINA 001 lesion.

[Case] A 62 years old man with underlying diabetes mellitus and hyperlipidemia presented with stable effort angina. Coronary angiogram showed a dominant left circumflex artery with tight stenosis at the obtuse marginal branch ostium. There was also a significant stenosis at the proximal left anterior descending artery.

[Strategy] Percutaneous coronary intervention was performed using right radial approach. Two coronary wires were placed at left circumflex artery and obtuse marginal branch. Intravascular ultrasound measured the sizes of the left circumflex artery and the obtuse marginal branch to be 3.5mm and 3mm respectively. The side branch ostial lesion was first prepared with a scoring balloon. A 3.0/15mm drug eluting stent was positioned at the obtuse marginal branch ostium with 2mm protrusion into the main branch while a 3.5/15mm non-compliant balloon was placed at left circumflex artery distal to the side branch. The stent was deployed at 16atm. After removal of the stent-balloon, the 3.5/15mm was pulled back to crush the protruded side branch stent. Subsequently, the coronary wire at the obtuse marginal branch was removed and the rewired again across the crushed stent. The stent was post-dilated with a 3.0/12mm non-compliant balloon. In the end, the touched left circumflex artery segment was treated with a 3.5/20mm paclitaxel coated balloon. The final result angiographic result was excellent. The treated obtuse marginal side branch looked like the shoulder of a sleeve. The proximal left anterior descending artery was treated with a 3.0/18mm bioresorbable vascular scaffold. Restudy coronary angiogram at 6 months showed excellent result.

[Discussion] Simple stenting to treat the isolated side branch ostium may not be an ideal strategy. The ostial lesion could only be covered adequately by the stent only if the stent protruding into the main branch. However, the protruded segment may impair the flow at the main branch. Moreover, the neo-carina produced by the protruded stent segment may become longer when the bifurcation angle is getting narrower. This new strategy, SHOULDER technique, described above could overcome these problems. However, this novel technique requires further evaluation by clinical trials in order to confirm its efficacy.

[Conclusion] This case illustrated the use of SHOULDER technique to treat the isolated side branch ostium lesion.