

¹Nagoya Daini Red Cross Hospital

Masaki Takenaka¹, Hiroki Kamiya¹, Kenji Furusawa¹, Takamitsu Nin¹, Ruka Yoshida¹, Mamoru Nanasato¹, Haruo Hirayama¹

Background: The combination of thinner struts and fewer connectors of new generation drug eluting stents (DES) may affect longitudinal stent deformation. In tapered vessels, a diameter mismatch between vessel and stent at the proximal edge could lead to longitudinal stent elongation after fully stent expansion. The aim of this study was to analyze the longitudinal elongation among different DESs. **Methods:** Four different DESs (Taxus Liberte (L), Xience V (X), Taxus Element (E), and Nobori (N)) were deployed in a tapered bench top model. The stent size in this study was 3.5mm. The proximal stent edge was adjusted to 5mm away from the marker point of 4.0mm in diameter. Every DESs were deployed at nominal pressure and they were dilated with the 4.0mm diameter non-compliant balloon at 20atm. Ultrasound was used to confirm the stent apposition and microscope was used to measure the stent total length and the stent length from the marking point to the proximal stent edge. **Results:** The change of stent total length were 0.07mm in L, 1.81mm in X, 1.45mm in E, 0.67mm in N. The change of stent length from marking point were 0.73mm in L, 2.0mm in X, 1.42mm in E, 1.14mm in N. **Conclusions:** Old generation DES may have more longitudinal strength than new generation DESs. When we will decide the stent size according to the distal vessel diameter for the treatment of ostial lesion using new generation DES, such as Xience V and Taxus Element, we should take account of stent elongation phenomenon.