The impact of post-dilatation on stent expansion and eccentricity using the novel balloon delivery system for the self-apposing coronary artery stent; a detailed Optical Coherence Tomography analysis

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Methods
We included 25 patients with de novo coronary lesions. In all 25 patients, OCT assessment after stent placement and after post-dilatation was performed in 24 patients with a mean post-dilatation pressure of 13.4 ± 2.3 atmospheres. Percentage malapposed side-branch struts on OCT was significantly lower after post-dilatation (2.4%, p = 0.011). Mean stent area increased significantly from 9.7 mm² before stent placement to 10.5 mm² after post-dilatation. Minimal eccentricity index was 0.77 post-stent-placement and 0.78 after post-dilatation (p = 0.122) and mean eccentricity index was 0.87 post-stent-placement and 0.86 after post-dilatation (p = 0.372).

Conclusions
This first-in-man experience demonstrates that intracoronary deployment of the Xposition S is feasible. Our OCT data demonstrated that stent eccentricity index values were >0.7 directly post-stent-placement, which is favorable. Post-dilatation has no significant impact on the stent minimum eccentricity and stent mean eccentricity with the use of the STENTYS Xposition S. However, post-dilatation does significantly improve mean stent area and stent strut apposition, which suggests that post-dilatation can optimize stent expansion and apposition of this device. Further research to examine the clinical implication and the association with cardiovascular outcomes is needed.

CATEGORIES: Intravascular

KEYWORDS: Self-expanding stent, Stent development, Stent geometry