

Geographic Miss with Aorto-Ostial Coronary Stent Implantation: Insights from Coronary Computed Tomography Angiography

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Background:

Accurate positioning of aorto-ostial coronary stents is challenging using conventional 2D coronary angiography. Coronary CT angiography (CCTA) allows detailed anatomic imaging of implanted stents. We assessed the accuracy of aorto-ostial stent deployment using CCTA.

Methods:

256-row CCTA scans of pts who had undergone aorto-ostial stenting were analyzed. We assessed the location of the proximal stent edge within an aorto-ostial landing-zone (AOLZ) defined as within 1 mm of the aorto-ostial plane and compared the findings with angiographic review (2 experienced operators).

Results:

Twenty-three stents (23 pts) were studied. On angiography, complete lesion coverage was present in 95% of cases and optimal location of the proximal stent edge within the AOLZ in 76%. However, CCTA showed variation in the distance between the aorto-ostial plane and different aspects of the proximal stent edge (mean 2.0 ± 1.3 , range 0.3-5.0 mm) (Figure). All aspects of the proximal stent edge were located within the AOLZ in only 3 (13%) cases, with geographic miss in the remaining 87%.

Conclusions:

1. Geographic-miss was common in aorto-ostial stenting and was underestimated by conventional 2D angiography. 2. CCTA is a useful tool which provides new insights into the assessment and follow-up of pts undergoing aorto-ostial stent implantation.

