

## **Abstract**

Calcified lesions carry the risk of suboptimal stent expansion. The purpose of this study was to investigate the impact of target lesion calcification on intracoronary ultrasound (ICUS) guided stent expansion after rotational atherectomy. **METHODS:** Stent expansion was assessed by ICUS in 39 patients with the aid of the proximal stent/proximal reference lumen, the minimal stent/mean reference lumen, and the minimal stent/minor reference lumen ratios as well as the symmetry index. Thirty-nine stent implantations in uncalcified lesions served for comparison. **RESULTS:** Relative stent expansion ranged between 76.3% +/- 6.7% and 98.4% +/- 16.4%. Categorization according to an ICUS-derived arc of superficial lesion calcium of <180 degrees (average 102 +/- 74 degrees) or >180 degrees (average 248 +/- 71 degrees) revealed decreased stent symmetry in calcified lesions >180 degrees compared with the control group (P <.05). Despite a trend toward less expansion with increasing calcium load, no significant differences of the lumen area ratios between the study groups was present. **CONCLUSION:** Rotational atherectomy before ICUS-guided stent implantation enables adequate stent expansion even in significant superficial target lesion calcification