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Clinical Cardiology:
Intravascular Ultrasound—
Guided Revascularization
Thursday Morning

3211

Coronary Stenting Guided by Intravascular Ultrasound
Shigeru Nakamura, Antonio Colombo, Antonio Gaglione, Yaron Almagor, Steve L. Goldberg, Luigi Maiello, Leo Finci, Paolo Rizzon, Jonathan M. Tobis. Columbus Hospital, Milan; Villa Bianca, University of Bari School of Medicine, Bari, Italy, and University of California, Irvine.

The purpose of this study was to evaluate the impact of the routine use of intravascular ultrasound (IVUS) in achieving an optimal result after Palmaz-Schatz stent implantation. IVUS studies were done in 64 consecutive patients on 67 lesions after angiographic evaluation showed good stent expansion. Vessel diameter, lumen diameter, and cross-sectional area (CSA) at the stented segment, at the proximal and distal reference vessel were measured by IVUS after achieving an optimal angiographic result. Further balloon dilatations were performed to improve the results in 55 lesions (82%). The minimum lumen diameter inside the stent increased from 2.7 ± 0.4 mm to 3.1 ± 0.5 mm ($p < 0.0001$), the major lumen diameter increased from 3.2 ± 0.8 to 3.6

± 0.5 ($p < 0.0001$), and the CSA increased from 6.9 ± 2 mm² to 9.0 ± 2.4 mm² ($p < 0.0001$). If no further dilatations were done after achievement of an optimal angiographic result 60% of the lesions stented would have been left with a CSA smaller than the distal reference vessel CSA. Based on this experience we consider IVUS essential in the evaluation of optimal stent expansion. The information concerning stent expansion, CSA and optimal balloon size and pressure to use for the final dilatations can not be obtained by angiography.