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Intravascular Status beyond 5 Years Following the First Generation Sirolimus-eluting Stent Implantation

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Background: Earlier angioscopic studies have demonstrated the immature arterial healing even after 5 years following the first generation sirolimus-eluting stent (Cypher, C-SES) implantation. However, intravascular status beyond 5 years following C-SES implantation remains unclear.Methods: We angioscopically evaluated 64 C-SES from 46 patients and divided them into 2 groups based on the follow-up period: late phase (LP, 2.6±1.2 years), 46 C-SES from 30 patients; very late phase (VLP, 8.2±1.4 years), 18 C-SES from 16 patients. We evaluated dominant neointimal coverage (NIC) grades through the stent, yellow color grades of the stented segment, and presence of thrombus. NIC was graded: grade 0, stent struts exposed; grade 1, struts bulging into the lumen, although covered; grade 2, struts embedded in the neointima, but translucent; grade 3, struts fully embedded and invisible. Yellow color was graded: grade 0, white; grade 1, light yellow; grade 2, yellow; grade 3, bright yellow. Results: Dominant NIC was significantly greater in VLP (grade 0, 0%; grade 1, 28%; grade 2, 55%; grade 3, 17%) than in LP (grade 0, 0%; grade 1, 67%; grade 2, 20%; grade 3, 13%, P=0.007). Maximum yellow color grade was also significantly higher in VLP (grade 0, 17%; grade 1, 33%; grade 2, 39%; grade 3, 11%) than in LP (grade 0, 33%; grade 1, 41%; grade 2, %; grade 3, 26%, P=0.044).Conclusions: In spite of the greater NIC grade, yellow color grade increased beyond 5 years after C-SES implantation.