OPTICAL COHERENCE TOMOGRAPHY FINDINGS OF LESION WITH VERY LATE RESTENOSIS AFTER BARE METAL STENT IMPLANTATION

i2 Poster Contributions
Georgia World Congress Center, Hall B5
Sunday, March 14, 2010, 3:30 p.m.-4:30 p.m.

Session Title: DES II, Restenosis, Left Main and Outcomes
Abstract Category: Restenosis/Instent Restenosis - Prevention and Mgt.
Presentation Number: 2502-493

Authors: Maoto Habara, Mitsuyasu Terashima, Yoshihiro Ko, Tsuyoshi Ito, Soichiro Ebisawa, Tairo Kurita, Nobuyoshi Tanaka, Kenya Nasu, Masashi Kimura, Tatsuya Ito, Yoshihisa Kinoshita, Mariko Ehara, Etsuo Tsuchikane, Yasushi Asakura, Osamu Kato, Takahiko Suzuki, Toyohashi Heart Center, Toyohashi, AL, Japan

Background: In-stent restenosis (ISR) after bare-metal stent (BMS) implantation peaks in the early phase (6-12 months). However, late ISR of BMS is occasionally observed beyond 4 - 5 years following BMS implantation. The mechanism of late ISR has not been fully clarified yet. Optical coherence tomography (OCT), a high-resolution intravascular imaging modality, visualizes microscopic structures of the coronary artery. We evaluated the morphologic characteristics of very late ISR (VLSR: later than 5 years) of BMS, compared early ISR of BMS (ESR: within 1 year) using OCT.

Method: VLSR was noted in 20 patients. OCT findings of VLSR including restenotic tissue structure pattern (heterogeneous or homogenous), predominant backscatter (low or high) and irregularity of lumen shape, and presence of intraluminal material were compared to those of ESR (20 patients).

Result: Restenotic tissue structure demonstrated heterogeneous pattern in 90% of VLSR and in 10% of ESR (p<0.0001). The predominant backscatter was low in 95% of VLSR and in 15% of ESR (p<0.0001). Lumen shapes was irregular in 65% of VLSR and in 15% of ESR (p=0.0031). Intraluminal material was found in 5% of ESR and in 50% of VLSR (p=0.0033).

Conclusion: The morphological characteristics of tissue structure with VLSR were different from those of ESR, which were more heterogeneous with low backscatter and/or irregular surface. These findings suggested that atherosclerotic changes of neointima as well as proliferation of neointima contribute to VLSR.