View metadata, citation and similar papers at core.ac.uk



A182.E1705 JACC March 9, 2010 Volume 55, issue 10A

IMPACT OF UNCOVERED STENT STRUTS ON OPTICAL COHERENCE TOMOGRAPHY (OCT) DETECTED THROMBUS FORMATION AT 10-MONTH FOLLOW-UP OF SIROLIMUS-ELUTING STENTS (SES)

i2 Oral Contributions Georgia World Congress Center, Room B310 Monday, March 15, 2010, 5:06 p.m.-5:18 p.m.

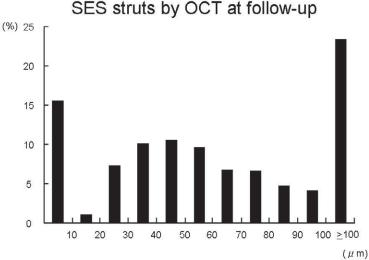
Session Title: Imaging and Stents Abstract Category: Intravascular Diagnostics Presentation Number: 2908-08

Authors: Yukio Ozaki, Masanori Okumura, Tevfik F. Ismail, Kousuke Hattori, Hiroyuki Naruse, Shino C. Kan, Makoto Ishikawa, Tomoko Kawai, Junichi Ishii, Hitoshi Hishida, Fujita Health University Hospital, Toyoake, Japan, Charing Cross Hospital, London, United Kingdom

Background: While early promising results with drug-eluting stents (DES) have been tempered by the relatively rare but devastating development of late and very late stent thrombosis (LST/VLST). OCT having high resolution (up to 10µm) would be useful to detect the neointimal hyperplasia and thrombus.

Methods & Results: We performed 3993 strut analysis by OCT at every 1 millimeter in 30 patients with sirolimus-eluting stent (SES) at 10-month follow-up. Stent diameter used was 2.92+0.35mm with the length of 19.0+3.6mm. Of the 3993 struts, 622 (15.6%) struts remained uncovered (<10µm) and the remaining 3371 (84.4%) struts had covered strut (figure). While thrombi were identified as protruding masses, red thrombi were characterized as high-backscattering protrusions with signal-free shadowing and white thrombi were signal-rich and low-backscattering. Of the 25 thrombi, 3 were red, 8 white and 14 mixed thrombi. Of the 25 thrombi, 16 (64%) were observed on uncovered struts and the remaining 9 (36%) were seen on covered struts, with significantly higher incidence of thrombus on uncovered struts than on covered struts (p<0.001).

Conclusion: While 64% of OCT-detected thrombus was found on uncovered stent struts, the remaining 36% was observed on covered stent struts at follow-up of SES (p<0.001). While uncovered stent struts could play a role in the thrombus formation, other mechanisms such as fibrin deposit over the stent strut and incomplete stent apposition would also relate to the occurrence of LST/VLST.



Frequency distribution of neointimal thickness on SES struts by OCT at follow-up