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Background: Recent studies using sirolimus-eluting stent (SES) have demonstrated the excellent performance for the treatment of coronary lesions. However, in the real world we have something to using SES in case of very small lesions with <2.25mm diameter. Objective: we determined whether SES deployment for lesion with <2.25mm was available. Method: We treated 122 lesions using one 2.5mm-SES from April 2005 to December 2007. Lesions using another stents as well as same stents in another diameter were excluded. Only one SES could not deliver at the LCX distal portion because of severe calcification. Among them, follow-up angiography was performed in 76 patients with 80 lesions. Results: Lesions were separated into 2 groups according to the pre-PCI reference diameter (RD). One group was RD <2.25mm (group-A; n=35), and another group was RD ≥2.25mm (group-B; n=45). These two groups were compared retrospectively. The pre-RD (mm) of group-A and group-B were 1.95 ± 0.35 and 2.49 ± 0.19 , retrospectively ($p < 0.05$). The pre lesion length and % diameter stenosis were similar. The delivery stent pressure (atm) were 12.4 ± 5.5 and 18.6 ± 4.8 ($p < 0.05$). The usings of IVUS-catheter were similar. The rate of restenosis were 14.3% and 8.9% ($p = n.s.$). The late loss (mm) were 0.31 ± 0.54 and 0.21 ± 0.53 ($p = n.s.$). Although The stentedge dissections were presented at three cases, the restenosis were not occurred. Conclusions: a 2.5mm-diameter SES deployment for very small lesion was equally effective although low-pressure implantation was necessary.