Background: Stent fracture (SF) is an unresolved, clinically relevant issue, even in the newer-generation drug-eluting stent era. The PROMUS Element platinum chromium everolimus-eluting stent (PcCr-EES; Boston Scientific, Natick, Massachusetts) is designed to provide the improved fracture resistance, whereas the incidence and clinical impact of SF after PcCr-EES implantation remains unclear. The aim of this study was to assess the incidence and clinical impact of SF after PcCr-EES implantation.

Methods: Between March 2012 and June 2013, a total of 676 patients with 839 lesions undergoing PcCr-EES implantation and follow-up angiography within 9 months after index procedure were analyzed. SF was defined as complete or partial separation of the stent, as assessed by plain fluoroscopy, during the follow-up. We assessed the rate of SF and the cumulative incidence of definite early and late stent thrombosis within 9 months.

Results: SF was observed in 12 of 839 lesions (1.4%) and 12 of 676 patients (1.7%). Cumulative incidence of clinically-driven target lesion revascularization and definite stent thrombosis within 9 months was 7.4% (95% CI 3.5%-13%). At 2-year follow-up, the cumulative incidence of early re-stenosis was 7.7% (95% CI 3.1%-14%). At 2-year follow-up, the cumulative incidence of definite early and late stent thrombosis within 9-month was similar between the SF and non-SF groups (0.0% versus 0.2%).

Conclusions: SF after PcCr-EES occurs in 1.4% of lesions and appears to be associated with clinically-driven target lesion revascularization.

TCT-651
The Relevance to Clinical Outcomes of Stent Fracture after Second Generation DES deployment
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Background: Stent fracture after sirolimus-eluting stent (SES) implantation has reported to be associated with an increased risk of adverse events and those are previously reported. But little is known about the outcomes after re-intervention for SES restenosis lesion with SF. After index procedure from April 2007 to August 2011, total 2059 lesions implanted SES during PCI at our hospital. Total 228 lesions, 11.1% had restenosis (defined as %diameter stenosis >50%) in follow-up angiogram until March 2013. Subjects of the study were 49 lesions 42 patients those implanted SES for denovo coronary artery stenosis and in-stent restenosis with SF was documented in follow-up angiogram. SF was defined as complete or partial separation of the stent as assessed by plain fluoroscopy. During the target lesion revascularization procedure, 14 lesions implanted everolimus-eluting stent (EES group), 20 lesions implanted sirolimus- and paclitaxel-eluting stent, stainless steel stent with durable polymer (SS group). And also 15 lesions were dilated with balloon angioplasty alone (POBA group). We compared the outcomes of 3 groups retrospectively.

Results: Baseline characteristics were similar. One-year cumulative incidence of restenosis after repeat intervention those calculated by Kaplan-Meier methods were EES group 22%, SS group 66% and POBA group 76%, respectively. EES group significantly reduced the cumulative incidence of restenosis after repeat intervention (versus SS group; p=0.0471 and POBA group; p=0.0085).

Conclusions: For reduction in incidence of re-restenosis for the SES restenosis lesion with SF during 1-year after repeat intervention, cobalt chromium SES implantations were superior to stainless steel stent with durable polymer or balloon angioplasty alone.