


Clinical vignette

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Multiple sirolimus eluting stent fractures

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A 73-year-old woman was admitted with a history of previous myocardial infarction and a nuclear perfusion scan showed an area of ischaemia in the inferior wall. Coronary angiography revealed a total occlusion of the proximal right coronary artery (RCA); percutaneous coronary intervention was performed and two sirolimus eluting stents (Cypher 3.0–33 mm, Cypher 3.0–28 mm, and Cordis) were deployed (in overlapping) at 16 atm with a good angiographic result. No gap between the two stents (Panel A) was evident at fluoroscopic images. The full metal jacket distended the normal tortuosity of the vessel.

Twenty-eight months later, the patient returned to our emergency department for unstable angina. Repeat angiography showed the patency of the vessel with multiple sites of angiographically non-significant in-stent neointimal proliferation; the fluoroscopic images revealed complete stent fracture and misalignment located in the proximal (moderate angulation) and middle segments (site of overlapping and hinge points) of the RCA (Panel B, arrows). The vessel had regained its physiological tortuosity.

Intravascular ultrasonography (Galaxy, Boston Scientific) confirmed the absence of metallic struts in the site of circumferential fracture with neointimal hyperplasia at the strut-free segments (Panels C–F). Vessel tortuosity and the use of overlapping stents may contribute to these complications.