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Histopathologically confirmed very late stent thrombosis caused by stent fracture after implantation of first-generation drug eluting stent

A 76-year-old woman was admitted to our hospital complaining of chest pain of 3 h duration. She underwent emergent percutaneous coronary intervention eight years ago, diagnosed as anterior acute myocardial infarction (AMI). A first-generation sirolimus-eluting stent (SES) was implanted at mid the left anterior descending artery (segment 7). Antiplatelet therapy was discontinued two weeks ago because she had surgical treatment for colon cancer. The 12-lead electrocardiogram on admission showed ST elevation in leads V₁₋₃ and poor R progression, consistent with an anterior AMI. Emergency coronary angiography (CAG) revealed an in-stent total occlusion of segment 7. Magnification images in CAG revealed grade V stent fracture (SF) and intravascular ultrasound confirmed the absence of struts in the midst of SES. Aspiration thrombectomy was performed, using Export Advance™ Aspiration Catheter (Medtronic, Inc, Minneapolis, Minnesota) and several red thrombi were aspirated. Balloon dilatation using Lacrosse NSE ALPHA 3.0/13mm (Goodman Co., LTD., Nagoya, Aichi, Japan) achieved grade 3 TIMI flow in final CAG and max CK was 1128 IU/l. The patient was discharged from the hospital on the 15th day free from chest pain on a regimen of aspirin 100mg and clopidogrel 75mg. The histopathology showed the presence of macrophages and foreign body giant cells in the aspirated thrombi, which indicated foreign matter reaction to implanted stent. The patch test as an exploration for metal allergy was negative. These observations revealed that this patient's very late stent thrombosis was caused by SF and discontinuation of antiplatelet drugs, rather than metal allergy.