Localized Inflammation and Aneurysm Formation 10 Years After Sirolimus-Eluting Stent Implantation

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A 63-year-old woman was admitted for the treatment of sick sinus syndrome and atrioventricular block. She had received sirolimus-eluting stent (SES; 2.5×18 mm) in the left anterior descending artery (LAD) 10 years previously. Routine coronary angiography had indicated no stent restenosis 1 year after SES implantation. The patient had a history of hyperlipidemia and hypertension, and coronary risk factors were well controlled after the stenting. She continued taking aspirin at 100 mg/day and cilostazol at 200 mg/day for 10 years. As part of thorough examination of atrioventricular block, 18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT) was performed to rule out cardiac sarcoidosis. There was no myocardial FDG uptake, but there was a significant uptake around the SES (Figure 1). Coronary CT angiography showed aneurysmal dilatation (18×28 mm) with a low-density area surrounding the SES (Figure 2A). Coronary angiography

Figure 1. 18F-fluorodeoxyglucose positron emission tomography/computed tomography (FDG-PET/CT) showing significant localized FDG uptake around the sirolimus-eluting stent in the left anterior descending artery.
Localized Inflammation After SES Implantation

A patient presented with atrioventricular block, the relationship between the inflammation and the conduction disturbance is not clear. FDG uptake correlates with macrophage accumulation and inflammation. Hence, FDG-PET can provide sensitive detection of active inflammation. The present case shows that inflammatory reaction to SES may persist over the years, and that such a localized disorder may go undetected in routine daily clinical practice. Careful long-term follow-up and judicious use of antiplatelet therapy is warranted in patients with SES.

References

Figure 2. (A) Coronary computed tomography angiography showed aneurysmal dilatation (18×28 mm) with a low-density area surrounding the sirolimus-eluting stent and proximal diagonal branch. (B) Coronary angiography showed aneurysm formation at the carina to diagonal branch as well as diffuse severe in-stent stenosis.