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Intravascular Ultrasound-Guided Stent Implantation for the Focal Stenosis in the Middle Shaft of Twenty-Year Left Internal Mammary Artery Graft

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A 65-year-old male patient presented to our cardiovascular center with chest discomfort. He had received an off-pump coronary artery bypass graft (CABG) twenty years ago. The left internal mammary artery (LIMA) was directly anastomosed to the left anterior descending artery (LAD).

Coronary angiogram (CAG) demonstrated multiple chronic total occlusions within the native coronary arteries (proximal LAD and distal right coronary artery), and a LIMA graft angiogram showed severe focal stenosis in the middle shaft of the LIMA graft (Fig. 1A). Intravascular ultrasound (IVUS) showed large amounts of fibrotic plaque with a minimum lumen area of 2.9 mm^2 and a plaque burden of 84.1% (Fig. 1B). We deployed a sirolimus-eluting stent (BioMime^{TM}, 3.0 mm×16 mm; Palex Medical), and final CAG showed no residual stenosis with good distal flow (Fig. 1C). Final IVUS demonstrated a minimum stent area of 7.6 mm^2 with good stent apposition (Fig. 1D). The patient was successfully discharged without any complications.

The incidence of graft occlusion in LIMA grafts is relatively low and primarily occurs at the site of distal anastomosis to the native epicardial coronary artery,[1] or, less frequently, at the ostial site.[2] However, there is a paucity of reported cases of graft stenosis in the middle shaft of the LIMA.[3] We are the first to report a case of the successful IVUS-guided drug-eluting stent implantation for the middle shaft of LIMA graft in a patient who underwent off-pump CABG twenty years ago.

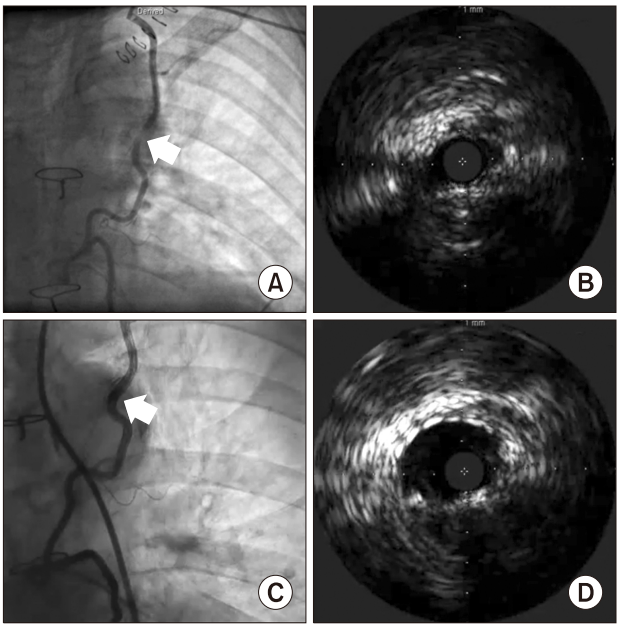

FIG. 1. Coronary angiogram (CAG) showed severe focal stenosis in the middle shaft of the left internal mammary artery graft (A). Intravascular ultrasound (IVUS) showed large amount of fibrotic plaque with minimum lumen area of 2.9 mm^2 and plaque burden of 84.1% (B). Final CAG showed no residual stenosis with good distal flow (C). Final IVUS demonstrated a minimum stent area of 7.6 mm^2 with good stent apposition (D).

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CONFLICT OF INTEREST STATEMENT

None declared.

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