A 60-year-old woman experienced exertional chest pain. She underwent percutaneous coronary intervention with a drug-eluting stent (Nobori, Terumo Corporation, Tokyo) at the midportion of the left anterior descending artery. In the 3-month follow-up angiography, there was an in-stent restenosis at the midportion of the left anterior descending artery, which was also the site of a previous stent implantation (arrow, Figure 1A). In optical coherence tomography, neointimal hyperplasia proliferation with a heterogeneous pattern was observed with a minimal lumen area of 1.7 mm² (asterisk, Figure 1A). Angioplasty with a drug-coated balloon (Sequent please; B. Braun, Melsungen, Germany) was performed at the in-stent restenotic lesion. After angioplasty with a drug-coated balloon, there was a contrast-filling defect in the distal portion of the left anterior descending artery in coronary angiography (arrow, Figure 1B), and some tissue material was attached on the coronary vascular wall in optical coherence tomography (asterisk, Figure 1B). Removal of the abnormal tissue material was successfully performed with an aspiration suction catheter; disappearance of the contrast-filling defect was confirmed by angiography and optical coherence tomography (Figure 1C). The aspirated material from the distal left anterior descending artery grossly appeared to be whitish and transparent tissue debris (white arrow, Figure 2A). Pathological findings indicated definite neointimal tissue (not thrombi), because the specimen was composed of loose tissue containing scattered short spindle cells in the myxoid stroma (Figure 2B). The cause of such neointima tissue embolization might be explained by the angioplasty having involved frail components of neointimal tissue that consisted of loose myxoid stroma on pathological examination. This report has described an in vivo demonstration of neointimal tissue (not thrombi) embolization after a drug-coated balloon, an extremely rare phenomenon that was confirmed by optical coherence tomography and histological findings.

Disclosures

None.
Figure 1. Upper panels show angiographic findings of in-stent restenosis at the midportion of the left anterior descending artery (preintervention in A, postintervention in B, and successful aspiration of contrast-filling defect in C). The arrow in A indicates significant stenosis of in-stent restenosis; the arrow in B indicates a contrast-filling defect in the distal portion of the left anterior descending artery after angioplasty with a drug-coated balloon; and the arrow in C indicates the absence of the contrast-filling defect after successful aspiration. The lower panels show corresponding optical coherence tomographic images. The asterisk in A shows a heterogeneous pattern of neointimal tissue in in-stent restenotic lesions; the asterisk in B shows the presence of abnormal tissue material in the distal portion of the left anterior descending artery; and the asterisk in C shows the absence of abnormal tissue material after successful aspiration.

Figure 2. The aspirated tissue material appears transparent and whitish (A). The surface was partly covered by endothelial cells (yellow arrow, B) and confirmed by CD31 (+) in immunohistochemistry staining (yellow arrow, C). Some inflammatory cells including eosinophils (yellow arrow, D) and histiocytes (confirmed by CD68, yellow arrow, E) were also infiltrated in the tissue.
In Vivo Demonstration of Frail Neointimal Tissue Embolization After Angioplasty With a Drug-Coated Balloon Confirmed by Optical Coherence Tomography and Histology
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