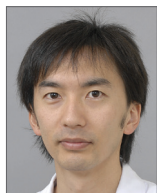


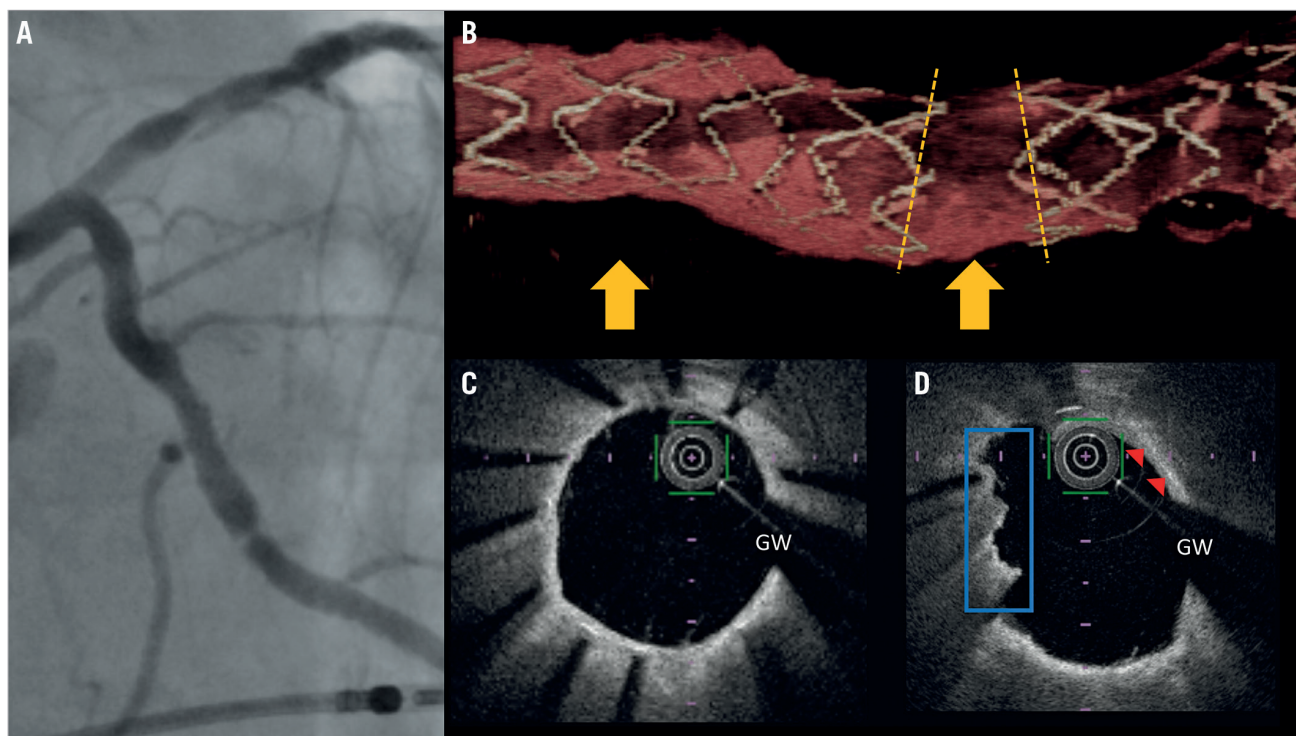
# Usefulness of three-dimensional optical frequency domain imaging for diagnosing in-stent restenosis due to a stent fracture



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A 74-year-old man underwent a percutaneous coronary intervention (PCI) due to worsening effort angina pectoris. We implanted a 3.0×18 mm DES (Nobori®; Terumo Corp., Tokyo, Japan) in the left circumflex coronary artery (LCx). The final angiographic results were satisfactory for the targeted lesion. Thirty-three months later, coronary angiography revealed in-stent restenosis (**Panel A, Moving image 1**). After an angioplasty using a 3.0×15 mm balloon (Lacrosse® NSE ALPHA™; Goodman Co., Ltd, Nagoya, Japan), optical frequency domain imaging (OFDI) was performed. The multiple struts of the stent were completely fractured at the acquired transection with a gap in the stent body (**Panel B, Moving image 2**). Although **Panel C** shows circumferentially covered stent struts, superficial high-intensity high-attenuation plaque and a hazy appearance by OFDI might suggest accumulations of macrophage and mural thrombus on this fractured site (**Panel D**). Therefore, the

main reason for in-stent restenosis in this case might be persistent mechanical stress due to total separation type stent fracture. Finally, an angioplasty was performed with a 3.0×15 mm paclitaxel-coated balloon (SeQuent® Please; B. Braun, Melsungen, Germany).

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## Conflict of interest statement

The authors have no conflicts of interest to declare.

## Supplementary data

**Moving image 1.** Follow-up angiography revealed in-stent restenosis in the LCx.

**Moving image 2.** 3-dimensional OFDI showed the total separation type stent fracture.

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