Sneaking hematoma beyond the stent implanted for focal stenosis of the right coronary artery: insight from intravascular ultrasound

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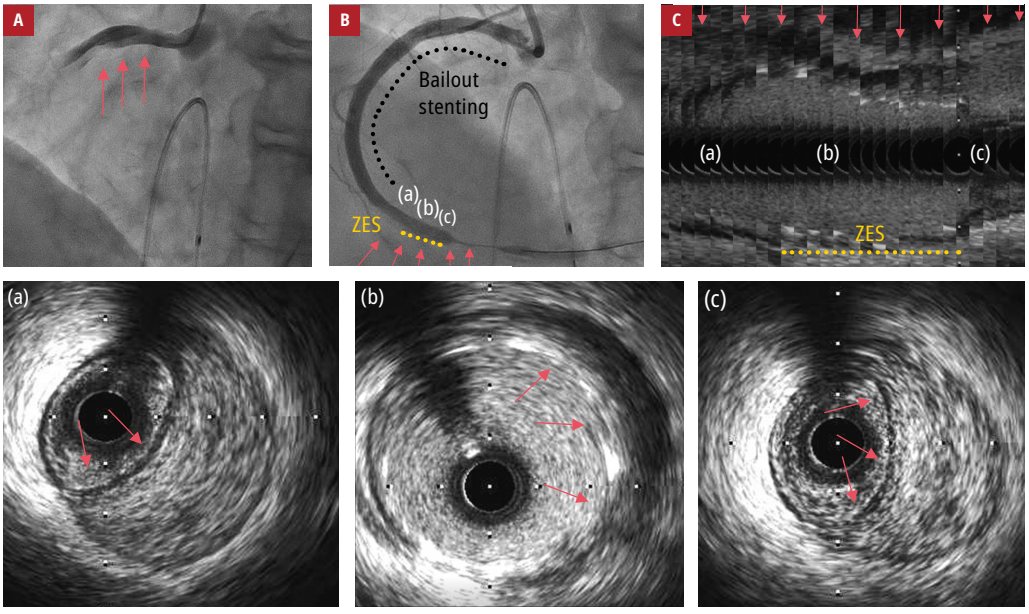

FIGURE 1 Imaging of a patient with severe, distal, focal right coronary artery stenosis: **A** – emergent coronary angiography showing the entry point of dissection at the proximal right coronary artery (arrows); **B** – coronary angiography showing proximal bailout stenting with 2 zotarolimus-eluting stents of 4/38 mm in size from the mid to proximal right coronary artery. Despite successful bailout stenting, occlusive stenosis distal to the stent implanted at the index procedure was found (arrow), although it was previously not seen. **C** – intravascular ultrasound after proximal bailout stenting (arrows indicate extended hematoma): **a** – proximal to the stent; **b** – stented segments, **c** – distal to the stent
Abbreviations: ZES, zotarolimus-eluting stent

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A 74-year-old woman with stable angina underwent elective coronary angiography (CA) revealing severe, distal, focal right coronary artery (RCA) stenosis (Supplementary material, *Figure S1A*). Baseline intravascular ultrasound (IVUS) showed a concentric fibro-fatty plaque without calcification and slight negative remodeling (Supplementary material, *Figure S1B*). The distal reference diameter was estimated at 4 mm by IVUS measurement. After predilatation with a 3-mm balloon, a 4/15-mm zotarolimus-eluting stent (Resolute Onyx, Medtronic, Inc., Santa Rosa, California, United States) was placed, and the implantation was

followed by postdilatation with a 4.5-mm noncompliant balloon. Final angiography showed excellent results and IVUS confirmed complete stent apposition without edge dissection (Supplementary material, *Figure S2B* and *S2C*).

Three hours after the procedure, the patient complained of chest pain and her electrocardiogram showed inferior ST-segment elevation. Emergent CA revealed occlusive dissection of the proximal RCA (FIGURE 1A) and IVUS showed extensive hematoma, narrowing the lumen. Based on the IVUS evaluation, 2 zotarolimus-eluting stents of 4/38 mm in size were implanted with minimal overlap from the mid to proximal RCA. However, despite successful bailout stenting, CA showed occlusive stenosis distal to the stent implanted at the index procedure, which was not seen previously (FIGURE 1B). Intravascular ultrasound revealed hematoma extending distally beyond the stent (FIGURE 1C). Based on the IVUS findings, in order to seal the entire segments with extended hematoma, 2 zotarolimus-eluting stents were additionally implanted, overlapping either side (proximal and distal) of the initial stent (proximal, 4/12 mm; distal, 3/38 mm). Final CA showed complete sealing of hematoma.

If well apposed, stent implantation can theoretically prevent proximal hematoma propagating distally.[1] In our patient, it could be speculated that the nature of a relatively ectatic vessel and lack of calcification may be associated with hematoma extending even outside the well-apposed stent. Furthermore, the stent area at the segments with hematoma became smaller when compared with that at the index procedure, which could be partially explained mechanistically, by the hematoma compressing the stent from the outside. Lastly, one could postulate that the proximal bailout stent might have pushed out hematoma distally, resulting in greater force than usual exerted by hematoma and contributing to not only extending the hematoma beyond the stent but also acute stent recoil.

SUPPLEMENTARY MATERIAL

Supplementary material is available at www.mp.pl/kardiologiapolska.

ARTICLE INFORMATION

CONFLICT OF INTEREST None declared.

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