Tackling a case of a stent lost in calcified right coronary artery: a novel implication of intravascular ultrasound

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DESCRIPTION

A 55-year-old man with a history of coronary artery bypass graft surgery presented to us with unstable angina. Preliminary investigations showed new ST depressions in inferior leads and elevated cardiac enzymes (Trop T and CKMB). A coronary angiogram was performed showing an occluded venous graft to the right coronary artery (RCA), with a haemodynamically significant heavily calcified lesion in the proximal and mid RCA (figure 1A). Angioplasty and stenting to the native RCA was planned. After adequate predilation of the lesion, the RCA was stented with a 3.5×28 mm everolimus eluting stent. As there was a residual lesion distal to the stented segment, we planned to stent the distal segment with a 3.5×24 mm everolimus eluting stent (figure 1B). During stent inflation, a rupture of the stent balloon occurred with partial stent inflation. All attempts to retrieve the stent were unsuccessful; crushing the uninflated stent with another stent was the only option left. As the artery was severely calcified, it was difficult to precisely locate the dislodged stent. An

intravascular ultrasound (IVUS) was performed on the RCA through the parallel coronary wire, showing a heavily calcified vessel and the unexpanded stent (figure 1C and video 1), which had migrated 5 mm distal to the proximal stent. With IVUS we could precisely locate the segment of the vessel where the unexpanded stent was; it was covered by a 3.5×38 mm everolimus eluting stent with good results (figure 1D).

Stent dislodgement is more common in tortuous and calcified lesions. Although several techniques for the retrieval of stents have been described in the literature,¹ none have been consistently successful. Crushing the dislodged stent with another coronary stent may be considered when all retrieval techniques fail. Although IVUS has shown to be very useful in optimising results of angioplasty, its role in managing the complications of coronary intervention cannot be ignored. Utility of IVUS in such cases of stent dislodgement has been reported in the literature.^{2,3} In our case, localisation of the dislodged stent was very difficult in view of heavy calcification. IVUS helped in localising the

Figure 1 (A) Right coronary artery (RCA) angiogram showing significant calcified lesion in proximal and mid RCA (arrow marks). (B) Post-stenting angiogram showing residual lesion distal to the stented segment being stented with 3.5 ×24 mm everolimus eluting stent (arrow marks). (C) Intravascular ultrasound of the RCA showing heavily calcified vessels (a), and dislodged unexpanded stent at 7 O'clock position (b). (D) Final result post-stenting.

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Video 1 Intravascular ultrasound of the right coronary artery showing heavily calcified vessels and dislodged unexpanded stent at 7 O'clock position

dislodged stent and delineated the coronary artery segment that had to be stented. Through this report, we want to emphasise that not only does the use of IVUS optimise the results of stenting, it can also be used to manage difficult complications arising during coronary intervention.

Learning points

- ▶ Stent dislodgement and embolisation is an uncommon complication in the era of balloon expanded stents.
- ▶ Stent dislodgement is more common in tortuous and calcified lesions.
- ▶ Stent retrieval remains the best option in such cases, but may not be possible in all cases.
- ▶ Intravascular ultrasound helps in managing some of the most difficult complications during coronary intervention, such as a dislodged stent.

Competing interests None declared.

Patient consent Obtained.

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