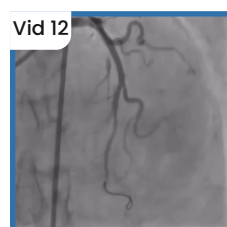
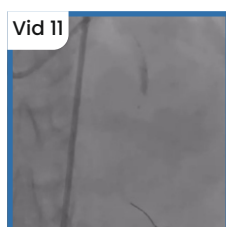
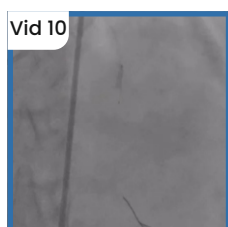
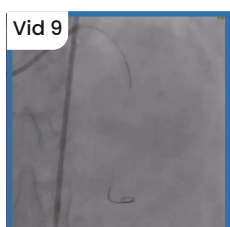
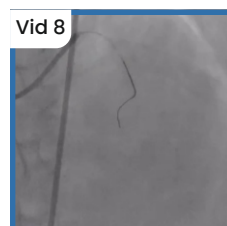
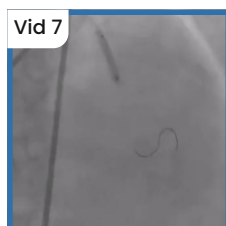
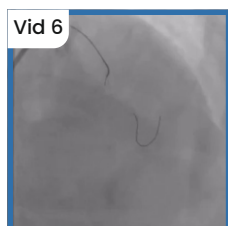
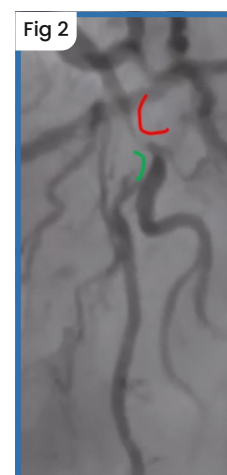
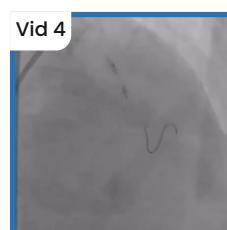
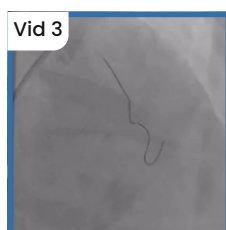
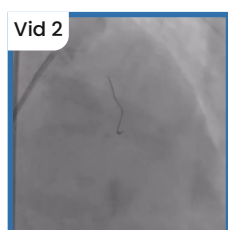
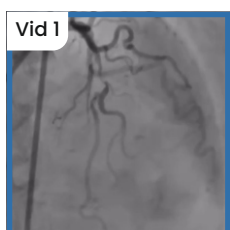




Proximal Solution for a Distal Problem

A 60-years-old male presented with acute coronary syndrome. Coronary angiogram revealed presence of a critical 95% (Video 1, Fig 1 red arrow) stenosis in LAD proximal to a large diagonal. The proximal LAD was in line with a large diagonal branch, however it formed a very acute and sharp angle with the distal LAD with a severe stenosis just beyond the origin of the diagonal (Fig 1, Blue arrow).

Angioplasty to LAD was planned and we intended to deploy one long stent in the LAD. We failed to cross into the distal LAD beyond the diagonal branch despite use of multiple polymer coated hydrophilic guide wires including Fielder FC, XTR, Pilot and Whisper (Video 2) and by placing a buddy wire in the diagonal (Video 3). The wire continued to prolapse or deflect into the diagonal branch. Varying degrees of angulation at the tip of the wire didn't help. Angled tip catheters (Super-cross) were difficult to use in presence of a critical lesion in proximal LAD. It was thought that the critical proximal LAD lesion was hindering the manoeuvrability of the guide wire. Hence the wire was parked in the diagonal and the proximal LAD lesion was dilated with a 2.5 mm x 12 mm balloon (Video 4) with satisfactory angiographic result (Video 5). However no guidewire could enter the LAD despite use of supercross 90 catheter (Video 6). Hence the proximal lesion was stented with a 3 mm x 15 mm DES (Video 7). The distal end of the stent was precisely landed just before the diagonal origin. It was followed by POT. Then tip of a super-cross 120 catheter was placed at the entry site just beyond the stent and the distal LAD was entered with a Pilot-150 wire (Video 8). The super-cross catheter was pushed over this wire into the LAD and the wire was then negotiated into the distal LAD (Video 9). An overlapping 2.5 mm x 12 mm DES was then deployed after balloon pre-dilatation (Video 10,11) with excellent final angiographic result (Video 12).



Take home points:

We often encounter situations where one needs to enter a distal side branch or continuation vessel that comes off the main vessel at an acute angle, but a proximal lesion prevents smooth wire entry or device passage.

Underlying Issues

1. Proximal tight lesion, plaque or calcific shelf deflecting the wire
2. Carina or ostial angulation making wire prolapse into other branches
3. If the proximal curvature in the vessel (Fig 2, red curve) is opposite to that of the distal part (Fig 2, green curve) containing the angulated vessel origin, the proximal curvature makes it impossible to negotiate the tip of the guide wire or angled catheter at the entry site distally.

Treating the proximal lesion first helps by following ways

1. It makes the area more “roomy” and facilitates wire entry and negotiation
2. It allows use of angled tip catheters like Supercross by creating more room
3. It straightens (particularly stenting) the proximal segment and removes the unfavourable curvature that prevents proper wire negotiation in the right direction
4. It reduces ischemia and increases procedural safety thereby allowing more time for wire negotiation

Hardware

1. It is important to use polymer coated hydrophilic wires in such bends and tortuosities
2. Increasing the support by use of appropriate guide catheters, buddy wires, micro catheters, angled catheters or dual lumen catheters is crucial to success



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