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Case Report

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New Technique of Balloon Crossing in Buddy Wire Method in Coronary Angioplasty: A Case Report

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Abstract

Background: *Failure of a post-dilatation balloon to cross a previously deployed coronary stent can pose a technical challenge during percutaneous coronary intervention (PCI), even when the primary guidewire is successfully positioned and guide-catheter support is adequate. Unfavourable guidewire bias or vessel geometry may impede balloon advancement. We describe a modified buddy-wire exchange technique to overcome this limitation.*

Objective: *To describe a novel guidewire repositioning manoeuvre that facilitates balloon delivery for post-dilatation of a previously deployed coronary stent when conventional balloon advancement over the primary guidewire fails.*

Technique: *When a post-dilatation balloon fails to cross a previously deployed coronary stent over the primary guidewire despite adequate guide support, especially after using guideline or guide plus catheter, a second guidewire is introduced as a buddy wire, and balloon advancement is attempted over the secondary guidewire. If the balloon still fails to cross, the primary guidewire is withdrawn while maintaining the secondary guidewire and the balloon catheter in position near the point of resistance, provided stable positioning can be safely maintained. The primary guidewire is then reintroduced, preferably using a distal loop configuration, and advanced back to the coronary ostium before being redirected into the target vessel. Balloon advancement is subsequently reattempted over the secondary guidewire. In our experience this manoeuvre almost always works, this manoeuvre is intended to alter the primary guidewire course and reduce unfavourable wire bias, thereby improving balloon alignment and facilitating passage through the previously deployed stent.*

Conclusion: *This modified buddy-wire exchange technique may offer a simple bailout strategy for failure of post-dilatation balloon delivery through a previously deployed coronary stent. By modifying guidewire geometry while maintaining secondary-wire access, the technique may facilitate balloon passage without immediate escalation to more complex device-delivery strategies. Further clinical evaluation is required to establish its procedural success, safety, reproducibility, and applicability across different coronary anatomies and stent configurations.*

1. Introduction

A 44-year-old male who is a known hypertensive, non- diabetic on medications presented with effort angina class II for the past 4 months. Evaluated for the same and blood parameters were normal, LVEF-55%, TMT was positive for inducible ischaemia and CT-CAG calcium score was 2719. Under right radial approach with 5F Tiger catheter, CAG was done which revealed Double vessel disease, Mid RCA had ulcerated eccentric lesion with 80% stenosis.

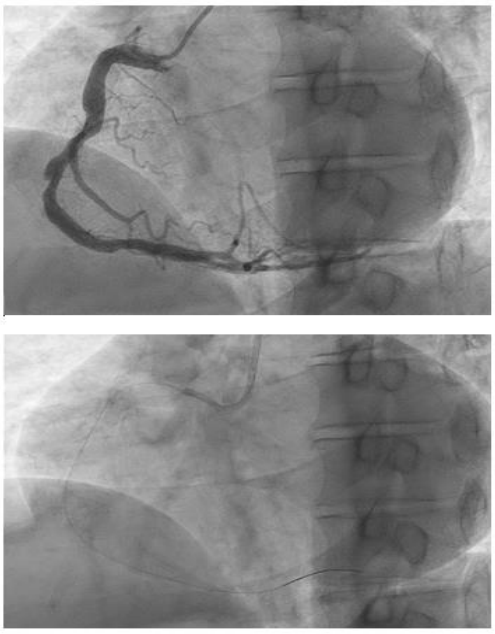


Figure 1

2. Case Report

With 6F AR 2 guiding catheter hooked into RCA, Lesion crossed with 0.014" x 190cm Sion blue guide wire. Lesion was directly stented with 4.5 x 32mm Synergy Megatron DE stent@16 atm. Post dilated with 5x 15mm balloon, proximal stent could not be post- dilated with same ballon because it prolapsed proximally. Due to angulated segment failure to advance the balloon despite guide extension catheter (GUIDE PLUS II) it was decided to use Buddy wire technique.

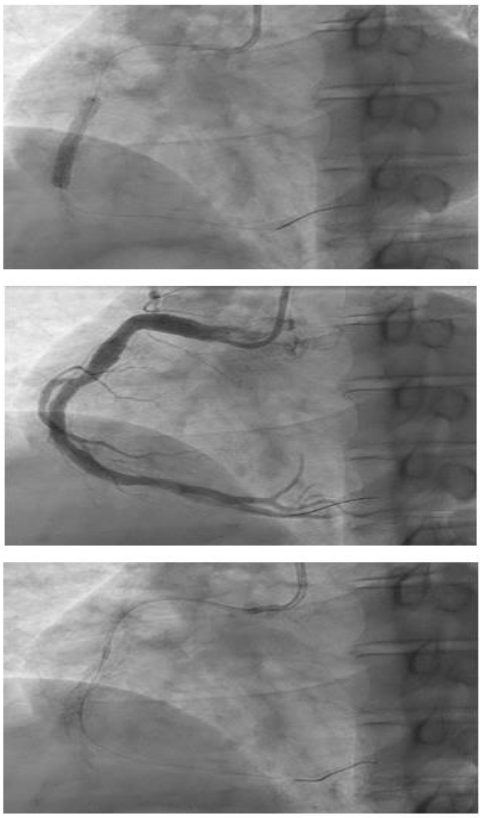


Figure 2

Buddy wire technique was done by crossing additional Sion blue wire as a parallel wire but the balloon failed to cross hence a new technique which was devised by us in the last 2 years and consecutively used in at least two dozen cases was employed. It's very simple if the balloon doesn't cross with buddy wires, the balloon is kept at area of resistance, the bare wire is removed till ostium of vessel and re- inserted again to cross the stent, then again it is attempted to cross the stent with balloon and in our experience the balloon will cross almost always after this manoeuvre. The stent was further post dilated with 4x8 Accuforce NC@12atm followed by 5x15mm NC trek balloon @12atm and further post dilation done with 4x10mm POT balloon@12 atm, using our technique, TIMI grade III flow was noted.

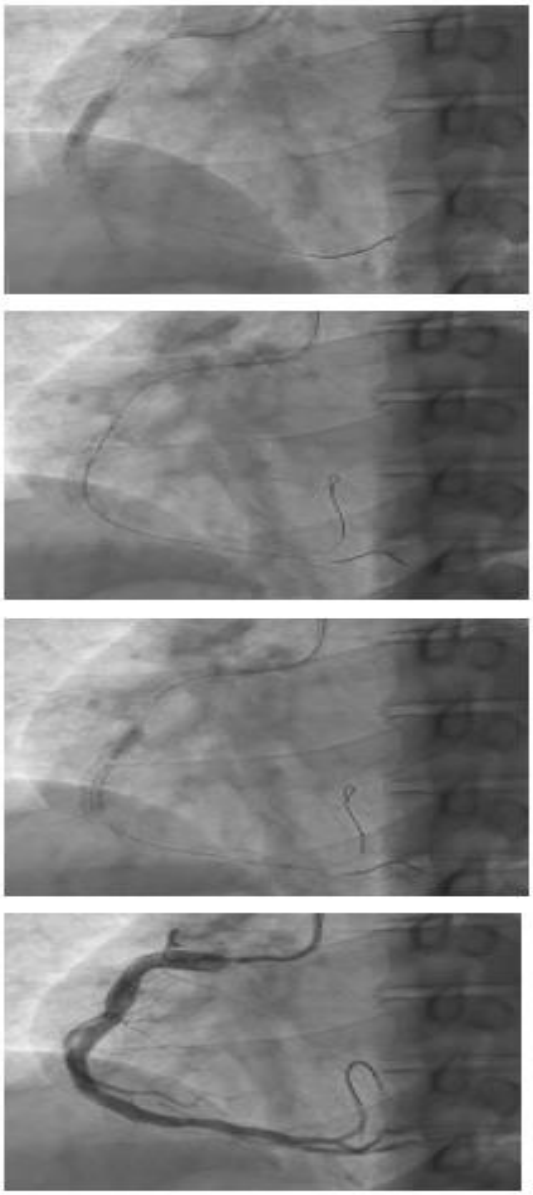


Figure 3

In a coronary angioplasty, the buddy wire technique is a simple, highly effective, and inexpensive method used to overcome procedural challenges. It involves inserting a second guide wire (the "buddy wire") into the target coronary artery parallel to the primary working wire. While the primary wire is used to deliver the balloon and stent, the buddy wire remains alongside it to modify the vessel's geography and mechanics.

The buddy wire assists in two main ways: [1]

- **Straightening Tortuous Vessels:** Severe bends or "S-curves" in an artery create friction. A supportive buddy wire helps straighten out these sharp angles, removing the sharp curves that cause balloons or stents to catch [1,2].
- **Acting as a Smooth Rail:** The second wire changes the entry angle and acts as a smooth parallel track. This prevents the

leading edge of a stent or balloon from snagging or digging into calcified plaque or the edge of a previously deployed stent [1,2].

- **Enhancing Catheter Support:** It stabilizes and provides extra back-up support to the guiding catheter, keeping it firmly in place within the aorta so it does not back out when pushing equipment forward [1,2].

2.1. Common Indications

- **Severely Tortuous or Twisting Vessels:** Arteries with sharp turns.
- **Heavily Calcified Lesions:** Hardened plaque that resists hardware passage.
- **Distal Blockages:** Lesions located deep down the arterial tree where catheter support naturally drops off.
- **In-Stent Restenosis:** When balloon slippage ("watermelon seeding") occurs while trying to dilate a re-narrowed previously placed stent.

3. Conclusion

This modified buddy-wire exchange technique may offer a simple bailout strategy for failure of post-dilatation balloon delivery through a previously deployed coronary stent. By modifying guidewire geometry while maintaining secondary-wire access, the technique may facilitate balloon passage without immediate escalation to more complex device-delivery strategies. Further clinical evaluation is required to establish its procedural success, safety, reproducibility, and applicability across different coronary anatomies and stent configurations.

References

1. Burzotta, F., Trani, C., Mazzari, M. A., Mongiardo, R., Rebuzzi, A. G., Buffon, A., ... & Crea, F. (2005). Use of a second buddy wire during percutaneous coronary interventions: a simple solution for some challenging situations. *The Journal of invasive cardiology, 17*(3), 171-174.
2. Jafary, F. H. (2006). When one won't do it, use two—double “Buddy” wiring to facilitate stent advancement across a highly calcified artery. *Catheterization and cardiovascular interventions, 67*(5), 721-723.

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