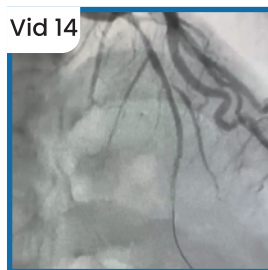
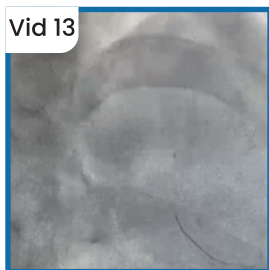
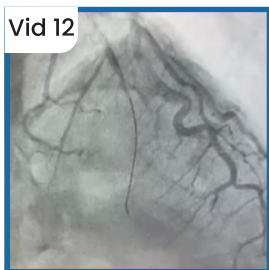
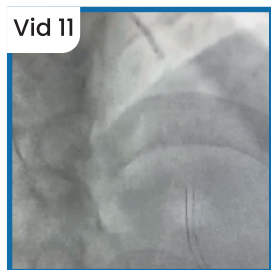
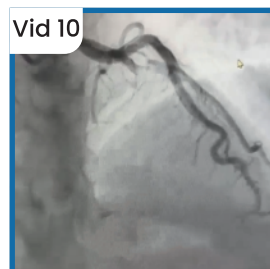
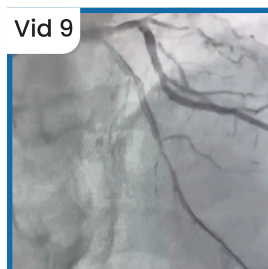
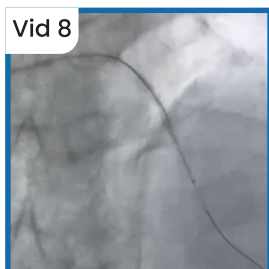
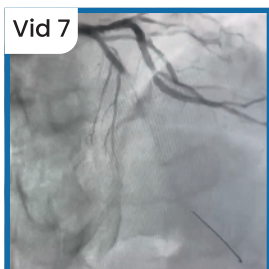
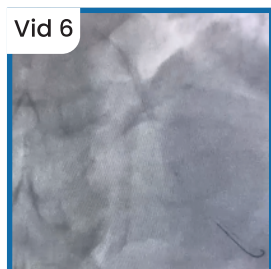
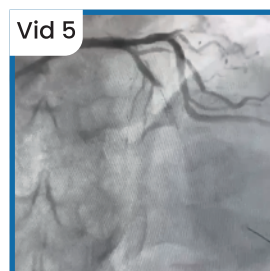
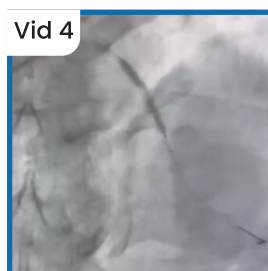
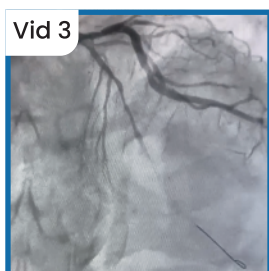
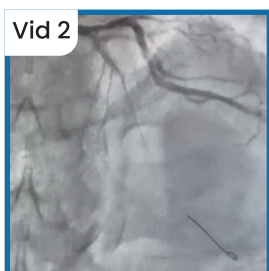
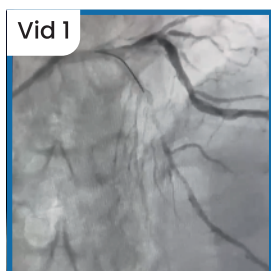


Low Dose Intracoronary Nikorandil for No-Flow

We have discussed treatment of no-flow or slow-flow in a couple of previous cases which we published in our chronicles. Here we present two cases of no-flow in LAD where distal Intracoronary injection of 500 micrograms of Nikorandil made a dramatic improvement in flow.

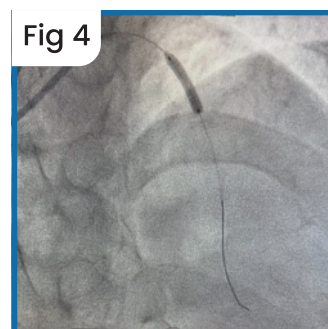
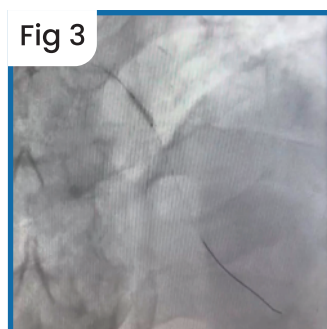
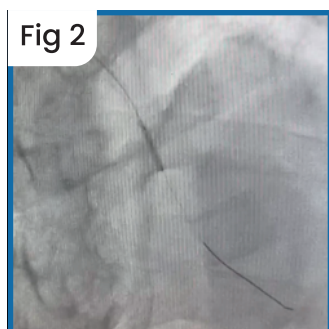
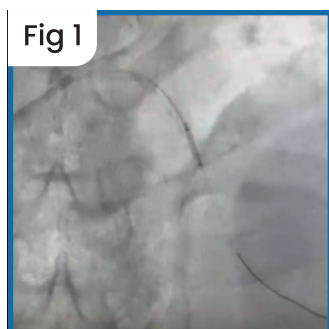
Case 1: A 65 y male with anterior NSTEMI was taken for PCI to LAD. His angiogram revealed a 90% LAD stenosis (Video 1). The lesion was long and was serially dilated with a 2 mm x 12 mm SC balloon (Fig 1,2,3). This was followed by marked slow flow in the artery (Video 2). There was partial improvement in flow after thrombus aspiration and Nikorandil (2 mg) administered in the guide catheter (Video 3). Assuming that it was balloon induced dissection, the lesion was stented with 2.75 mm x 28 mm DES (Video 4). This resulted in no-flow (TIMI-0) situation in the artery (Video 5). Thrombus-aspiration was performed (Video 6) with no improvement (Video 7). Catheter was then placed in distal LAD and a small amount of contrast was injected to confirm patency of distal vessel (Video 8). This was followed by administration of 500 micrograms of Nikorandil through the catheter in distal LAD which resulted in marked improvement in flow to TIMI-3 (Video 9). Intravenous Nikorandil infusion was continued at 2 mg per hour for 24 hours.



Case 2: A 54 y male presented with anterior wall STEMI. He was taken for primary angioplasty. Coronary angiogram revealed total thrombotic occlusion of LAD (Video 10). The lesion was crossed with the guide wire and the area was dilated with 2.0 x 12 mm SC balloon (Video 11). There was restoration of partial antegrade flow with contrast staining suggestive of distal micro vascular obstruction (Video 12). A thrombus aspiration catheter was then passed distally and 500 micrograms of Nikorandil was injected in the distal bed. Thrombus aspiration was then performed through the same catheter (Video 13). This resulted in marked improvement of flow in the artery (Video 14) which was then stented (Fig 4) with excellent final angiographic result (Video 15).

Important points

1. Slow-flow or no-flow in the artery is often secondary to distal micro vascular plugging by thrombus debris. The other causes are dissection, in-situ thrombus and severe distal spasm.
2. In no-flow situations (TIMI-0) vasodilator drug needs to be administered in the distal coronary artery in order to be effective. A proximally administered drug does not reach the micro vascular bed due to lack of flow. However in slow-flow setting (TIMI 1 or 2) the proximal administration of drug in the guide catheter is often effective.
3. Intracoronary Nitroglycerin should not be used to treat slow flow or no flow. It is predominantly an epicardial vessel dilator and has limited effect on micro-vasculature.
4. Various drugs like Sodium Nitroprusside, Adenosine, calcium channel blockers (Verapamil, Diltiazem or Nicardipin) are effectively administered intracoronary to treat slow flow or no flow situations. However all these drugs can cause transient yet significant hypotension. Nikorandil on the contrary, in a dose of 500 mcg injected deep intracoronary is highly effective and safe. Moreover it is readily available and cheap. It is well tolerated without any significant hypotension. It is important to avoid more than 1 mg of Nikorandil administration deep inside the coronary artery. Arrhythmias are known to occur with higher doses particularly in RCA.



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