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(NABH ACCREDITED HOSPITAL)

CARDIOLOGY CHRONICLES

1st January 2026 | ISSUE 49

A telltale sign of thrombus

A 51 y old male presented with acute anterior wall STEMI at an outlying hospital. He wasn't thrombolysed as he presented late after onset of chest pain. He developed recurrent chest pain and was then referred to us for further management. His coronary angiogram revealed a totally occluded LAD (Video 1). The lesion was crossed with Pilot-150 guide wire. A 2 mm x 15 mm semicompliant balloon was inflated at the site of occlusion (Video 2). Angiogram performed with deflated balloon in place revealed TIMI-III flow in LAD (Video 3). As soon as the deflated balloon was withdrawn from the vessel into the catheter, there was no anterograde flow in LAD (Video 4). Thrombus aspiration was performed by using Eliminate thrombus aspiration catheter (Terumo Inc) (Video 5). A small thrombus was aspirated after the first pass (Fig 1). This resulted in restoration of TIMI-III flow in the LAD (Video 6) which was then stented with excellent final angiographic result (Video 7).

A similar case with Left Circumflex (LCx) occlusion in a 54 y old male with failed thrombolysis is presented in Videos 8 through 14. You can actually see the thrombus stained by contrast that is aspirated into the catheter (Video 12).

No-reflow in the artery after removal of deflated balloon is a telltale sign of in-situ thrombus in the artery. Good flow in the artery is visible when the deflated balloon is in place across the lesion as the the thrombus is compressed against the wall by the deflated balloon. As soon as the balloon is removed from the artery, the thrombus comes back (recoil) to occlude the lumen. This type of thrombus recoil is seen with red thrombi that form in slow flow or stagnant situations (non-thrombolysed patients or patients with failed thrombolysis). It is rarely seen with platelet rich (white) thrombi of STEMI. Thrombus aspiration is the only option to treat this. The following should not be done in this situation.

1. Repeated balloon dilatation: It can crush the thrombus and result in distal embolization.

2. Administration of coronary micro-vasodilators like adenosine, sodium nitroprusside, Nikorandil etc are not useful in this situation.

3. Stenting of the lesion without restoration of flow could be counterproductive and result in resistant no-reflow.