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The Double Trouble-Rare Case of Subacute Double Vessel Thrombosis after Implantation of Everolimus Eluting Stents

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Abstract: ***This case presents a striking example of how unpredictable coronary events can be, even in a controlled clinical environment. A 72-year-old man, with diabetes and hypertension, developed simultaneous stent thrombosis in both the LAD and RCA merely ten days after successful PCI with everolimus-eluting stents-an occurrence that is quite rare in cardiology practice. It is evident that despite the advances in drug-eluting stents and antiplatelet therapy, such complications remind clinicians of the delicate balance between thrombotic risk and pharmacological response. The patient's management-ranging from emergency balloon angioplasty to the escalation of dual antiplatelet therapy with Ticagrelor and Tirofiban infusion-demonstrates how swift, evidence-informed decisions can reverse critical hemodynamic instability. This suggests that timely recognition and prompt interventional action remain the most decisive factors in survival. That said, the case also raises questions about the subtle interplay between patient-specific variables, such as drug resistance or vessel pathology, which may still elude current diagnostic clarity. In a broader sense, this case underscores the ongoing need for individualized post-PCI monitoring and adaptive therapy rather than rigid adherence to protocol.***

Keywords: stent thrombosis, percutaneous coronary intervention, dual antiplatelet therapy, drug-eluting stent, coronary angioplasty

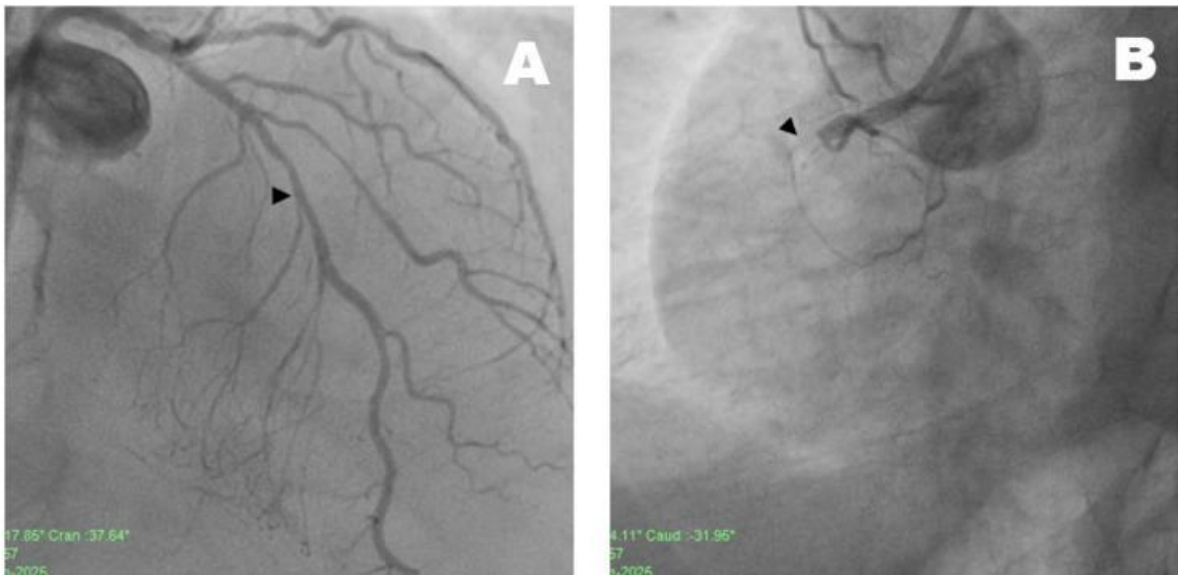
1. Introduction

A 72- year diabetic, hypertensive male was thrombolysed with reteplase for inferior wall with Right Ventricular Myocardial Infarction and referred to our centre for elective angiography. The patient had transient complete heart block which resolved spontaneously. The patient underwent angiography and Adhoc PCI to RCA and LAD with Everolimus eluting stents (2 stents in RCA and 1 stent in LAD). The patient was on Tab Aspirin 75mg OD, Tab Clopidogrel 75mg OD and Tab Apixaban 2.5mg BD post procedure.

On day 10 post PCI the patient developed chest pain with hypotension and multiple episodes of syncope ECG was suggestive of ST elevations in anterior leads with Complete Heart Block. The patient underwent temporary pacing and check angiography which revealed thrombotic occlusion of both LAD and RCA stent. An emergency Balloon angioplasty was done in both vessels after which the patient's vitals improved. The patient regained sinus rhythm and temporary pacing was removed. Patient was evaluated for Clopiodogrel resistance, however Clopidogrel resistance was not found.

Antiplatelet therapy was escalated to Tab Aspirin 75mg OD and Tab Ticagrelor 90mg BD. The patient also received Injection Tirofiban for 24 Hours.

After 14 days of the primary procedure the patient was stable and was discharged in a hemodynamically stable condition.



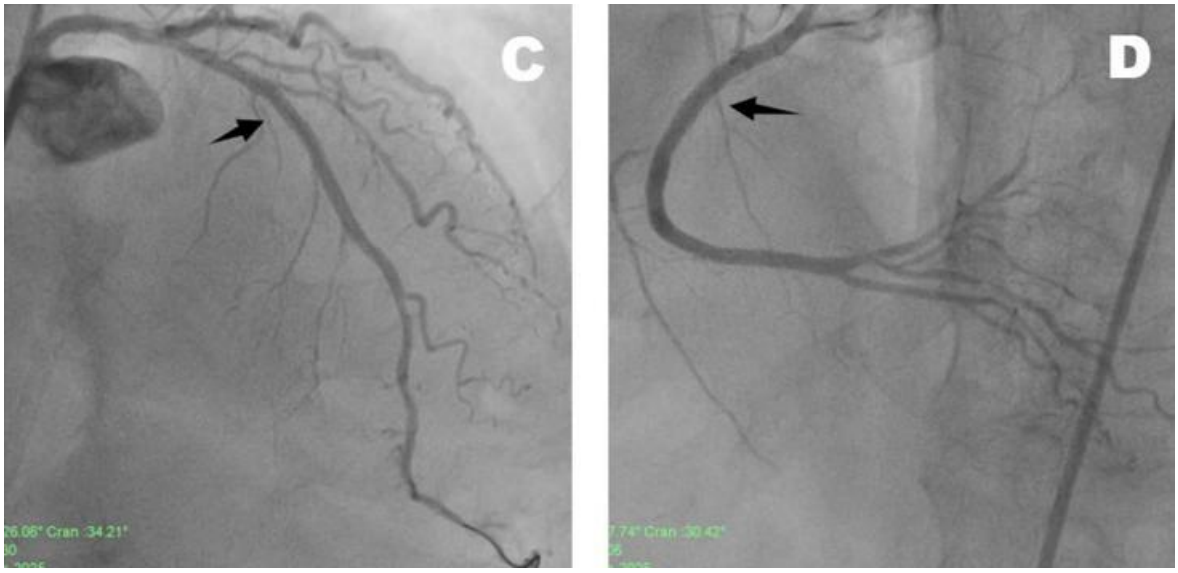


Figure 1: (A) CAG illustrating Proximal to Mid LAD diffuse disease (arrow head) with maximum 70% stenosis. (B) Proximal RCA occlusion by an organised thrombus (arrow head) (C, D) Deployment of a platinum-chromium alloy everolimus- eluting stent in LAD and RCA (arrow) was successfully achieved.

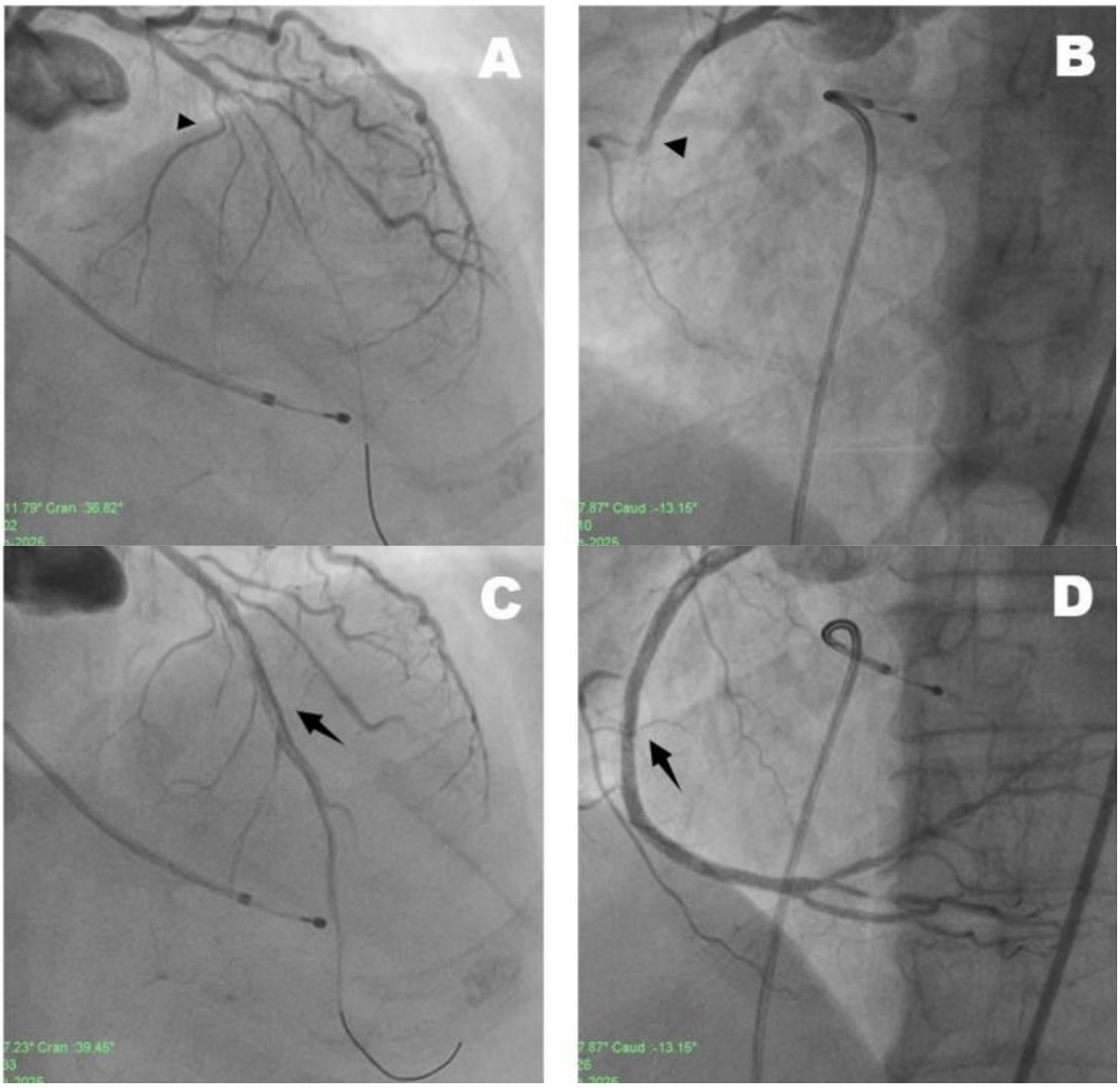


Figure 2: (A, B) Follow up angiography ten days poststenting showing occlusion at the Proximal stent site in the LAD (arrow head) and Mid stent site in RCA (arrow head) respectively. (C, D) Plain old balloon angioplasty was done in LAD and RCA stent (arrow) and TIMI III was achieved.

2. Discussion

The ARC concensus classifies stent thrombosis based on timing as[1]

Acute stent thrombosis*	0 to 24 hours after stent implantation
Subacute stent thrombosis*	>24 hours to 30 days after stent implantation
Late stent thrombosis†	>30 days to 1 year after stent implantation
Very late stent thrombosis†	>1 year after stent implantation

Acute and Subacute thrombosis are classified as early stent thrombosis and any event after 30 days is classified as late or very late stent thrombosis.

Though majority events of stent thrombosis occur in the first month post stent implantation, it is rare to have simultaneous stent thrombosis in two vessels so early post stent implantation.

Since the advent of second generation DES the incidence of stent thrombosis has significantly reduced. There is multiple risk factors associated with increased risk of stent thrombosis the most common being premature DAPT discontinuation, Stent under-sizing, Coronary dissection, Postprocedural TIMI flow, ≥ 50% lesion proximal to the culprit lesion, Malignancy, No aspirin at PCI and Impaired left ventricle ejection fraction (< 30%) [2]. The role of antiplatelet drug resistance in development of stent thrombosis is not clear and can only be speculated. However, the ESC guidelines only recommend testing for drug resistance only in high- risk patient.

The possibility of restenting the vessel is mostly discouraged as it was observed in the Spanish ESTROFA registry that the incidence of stent thrombosis recurrence in such patients was fivefold [4,5]. Another alternative is thrombectomy which has shown better outcomes in patient with stent thrombosis however these findings were not statistically significant [6]. Though no trails have proven any benefit of DAPT upgradation, many authors recommend upgradation of DAPT as it is not associated with increased risk of bleeding.

3. Conclusion

The reason to highlight this case is that despite the incidence of stent thrombosis being as high as 0.77% in elective PCI's [7], Stent thrombosis simultaneously in two vessels has been rarely observed. This case highlights the importance of early intervention in such cases is associated with positive outcomes.

References

[1] Cutlip DE, Windecker S, Mehran R, et al. Academic Research Consortium Clinical end points in coronary stent trials: a case for standardized definitions. Circulation. 2007; 115: 2344. doi: 10.1161/CIRCULATIONAHA.106.685313.
[2] van Werkum JW, Heestermans AA, Zomer AC, et al. Predictors of coronary stent thrombosis: the Dutch Stent Thrombosis Registry. J Am Coll Cardiol. 2009; 53: 1399–409. doi: 10.1016/j.jacc.2008.12.055.
[3] Windecker S, Kolh P, Alfonso F, et al. 2014 ESC/EACTS Guidelines on myocardial revascularization: The Task Force on Myocardial Revascularization of the European Society of Cardiology (ESC) and the European Association for Cardio-Thoracic Surgery (EACTS) Developed with the special contribution of the European Association of Percutaneous Cardiovascular Interventions (EAPCI) Eur Heart J. 2014 doi: 10.1093/eurheartj/ehu278
[4] de la Torre-Hernández JM, Alfonso F, Hernández F, et al. ESTROFA Study Group Drug-eluting stent thrombosis: results from the multicenter Spanish registry ESTROFA (Estudio ESpañol sobre TROmbosis de stents FArmacoactivos) J Am Coll Cardiol. 2008; 51: 986–90. doi: 10.1016/j.jacc.2007.10.057.
[5] Burzotta F, Parma A, Pristipino C, et al. Angiographic and clinical outcome of invasively managed patients with thrombosed coronary bare metal or drug-eluting stents: the OPTIMIST study. Eur Heart J. 2008; 29: 3011–21. doi: 10.1093/eurheartj/ehn479.
[6] Mahmoud KD, Vlaar PJ, van den Heuvel AF, et al. Usefulness of thrombus aspiration for the treatment of coronary stent thrombosis. Am J Cardiol. 2011; 108: 1721–7. doi: 10.1016/j.amjcard.2011.07.044.
[7] Kimura T, Morimoto T, Nakagawa Y, Tamura T, Kadota K, Yasumoto H, et al. Antiplatelet therapy and stent thrombosis after sirolimus-eluting stent implantation. Circulation. 2009; 119: 987–95. doi: 10.1161/CIRCULATIONAHA.108.808311. doi: 10.1161/CIRCULATIONAHA.1108.808311