



Case Study

STEMI in a Context of Metastatic Thymic Carcinoma: Internal or External Threat?

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Introduction

A 70-year-old man with cardiovascular risk factors (smoking, dyslipidemia, obesity) was referred to our institution for an on-going inferolateral STEMI 210 minutes after the beginning of chest pain. He suffered from a T4N2M1 thymic carcinoma with pleural and pericardial extension treated by chemotherapy (cisplatin + etoposide) and radiotherapy. Two days before his admission, he has diagnosed with a non-severe right upper lobar pulmonary embolism and provided tinzaparin anticoagulation.



The coronary angiography revealed significant stenoses of distal left main, proximal circumflex (Cx) and left anterior descending arteries, and acute occlusion of the mid-Cx with thrombus. The occluded artery was recanalized with difficulty: a hydrophilic wire+ microcatheter was used and the lesion displayed major recoil phenomenon following balloon pre dilatation. Finally, a 2.5x24 mm stent was implanted, leading to final TIMI 3 flow, chest pain cessation and EKG normalization (**A1-A3**).

Given the personal history of metastatic thymic carcinoma, a CT scan was performed the following day and depicted a fibrous extensive mediastinal tumor invading the pericardium and compressing the left atrial roof. The carcinoma sheathed the left coronary artery proximal segments suggesting that external Cx compression caused the STEMI (**B-D**).

In the light of these findings, we considered medical therapy of the remaining stenoses. The patient was discharged under double antiplatelet therapy for 6 months and long term tinzaparin anticoagulation (not oral anticoagulant in the context of cancer). He was proposed for pembrolizumab immunotherapy protocol. The patient has been followed-up for 18 months and didn't experience any recurrent ischemic nor bleeding events. Control CT scans revealed tumor stability (**E**).

Yet extremely infrequent, STEMI in the setting of mediastinal neoplasia might suggest the presence of external coronary compression and leads to dedicated imaging analysis.

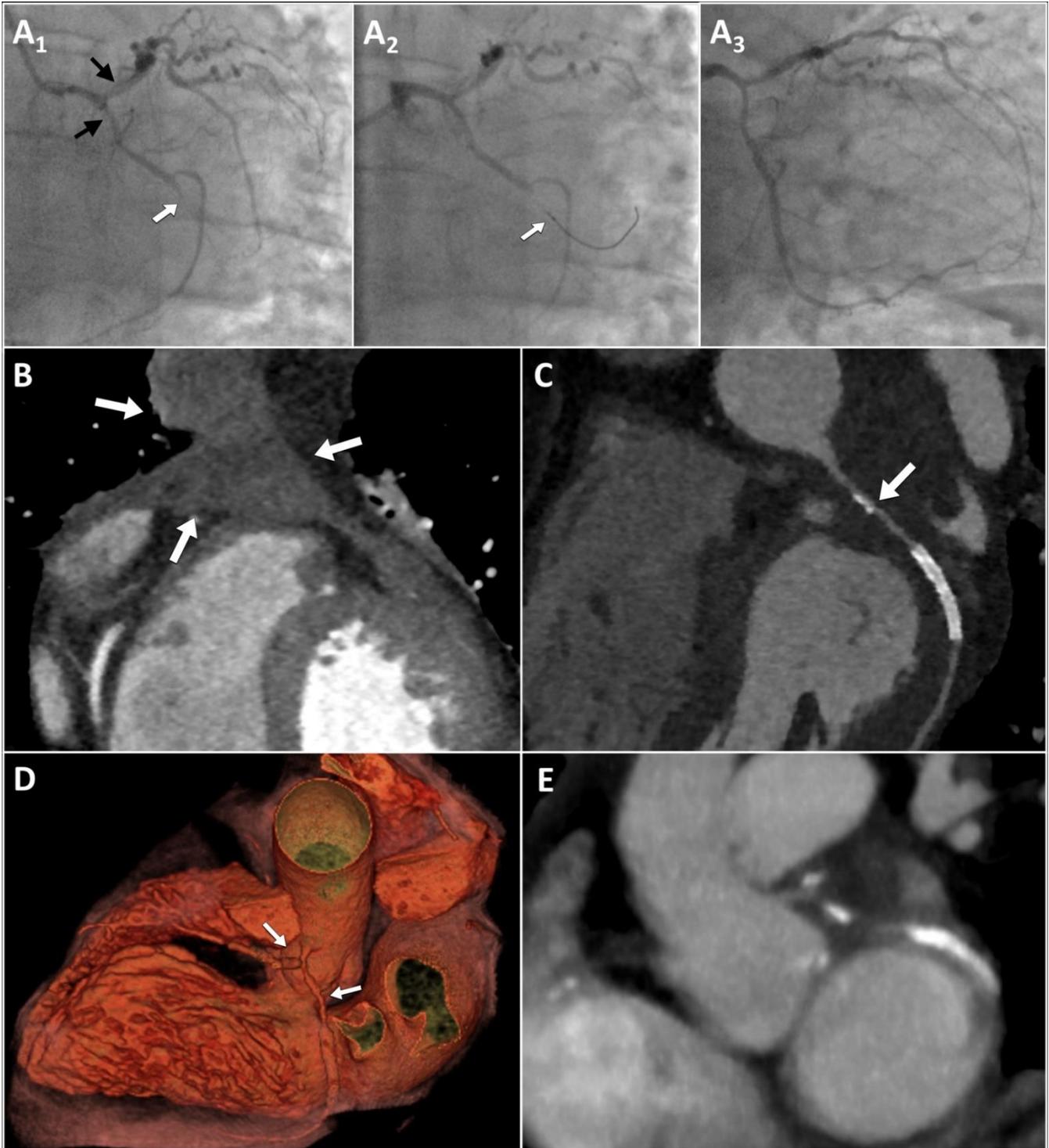


FIGURE 1



A1-A3: Initial coronary angiography showing the initial Mid-Cx occlusion (A1: white arrow) and proximal LAD and Cx stenoses (A1: black arrows). The culprit lesion was crossed with a hydrophilic wire and microcatheter support (A2: white arrow) leading to the implantation of a drug-eluting stent (A3)

B-D : Initial EKG-gated CT scan was performed 24h after the STEMI treatment and showed infiltrative mediastinal tumor invading the pericardial space and left atrium roof (B: white arrows). 2D reconstructions showed the proximal Cx artery engulfed within the carcinoma (C: white arrow), whereas the stented section was patent. 3 D reconstructions showed comparable findings (D: white arrows).

E: 12 months non EKG gated CT scan showed tumor stability under immunotherapy.

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