Effective percutaneous coronary intervention against compression by primitive mediastinal myxoid liposarcoma

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Despite its uncommon occurrence, coronary insufficiency could be also caused by extrinsic compression from surrounding anatomopathological structures, including malignancies: only a few cases of compression by primary mesenchymal tumors leading to acute myocardial infarction (MI) have been reported in the literature [1, 2]. Although it could be successfully treated with percutaneous coronary intervention (PCI), complete surgical resection is the only effective therapeutic option to improve prognosis.

In September 2021, a 71-year-old, hypertensive, and heavy smoking male patient was referred because of a subacute MI. An echocardiogram highlighted a moderately depressed (35%) left ventricular ejection fraction, with akinesis of the anterior and anterolateral mid-apical segments. Coronary angiography only showed total occlusion of the proximal left anterior descending (LAD) branch with poor collateral filling, in a left dominance setting (Figure 1A). A combined gated-positron emission tomography and myocardial scintigraphy showed the viability of an unperfused anterior wall and apex. Although it was not too late for revascularization, the patient declined an *ad hoc* PCI of LAD. Nevertheless, the same positron emission tomography also put in evidence an abnormal accumulation of ^{18}F-fluorodeoxyglucose in the left atrium (Figure 1B). The subsequent computed tomography angiography detected an expansive solid lesion involving the anterior mediastinum, the LAD coronary artery, the left atrial appendage, the left superior pulmonary vein, and the lingula parenchyma (Figure 1C). As metastases at the subcarinal lymph nodes and adrenals were observed too, an adrenal needle biopsy was performed: the histological analysis showed a myxoid liposarcoma (Figure 1D). Given the revascularization refusal and pending the evaluation of the best oncological treatment, an automatic cardioverter-defibrillator for sudden death primary prevention was implanted. Soon afterward, the patient was discharged on dual antiplatelet therapy with acetylsalicylic acid and clopidogrel.

In November 2021, he was readmitted because of anterolateral ST-segment elevation MI complicated by pulmonary subedema. An echocardiogram demonstrated a further worsening of the left ventricular contractility. Once his clinical condition ameliorated, coronary angiography documented a slight improvement in collateralization of the occluded LAD. A significant stenosis of the proximal left circumflex branch (Figure 1E) was effectively treated with direct implantation of a single, durable polymer, everolimus-eluting stent 3.5 × 23 mm (Figure 1F). After another computed tomography showing a further increase in myxoid liposarcoma dimension, the patient was finally discharged with an indication for chemotherapy with eribulin: he

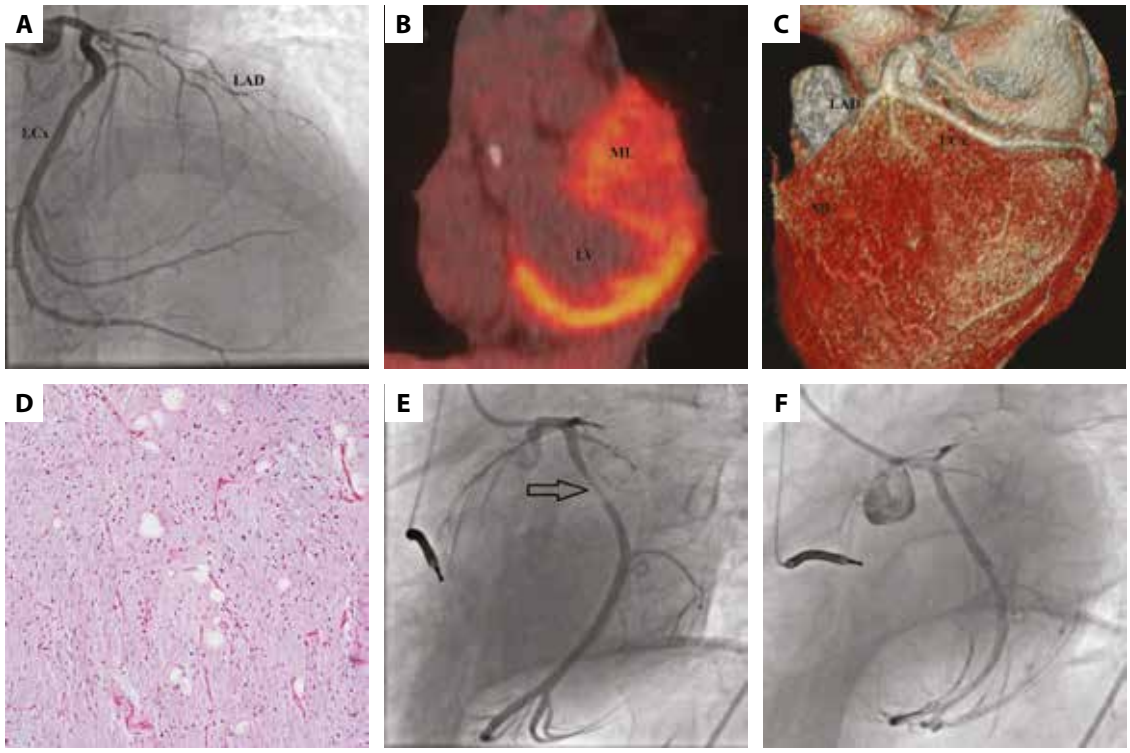

Figure 1. Transradial invasive coronary angiography showing left coronary dominance, with total occlusion of the LAD and absence of stenosis of the LCx (**A**). Coronal (**B**) fused positron emission/computed tomography images demonstrating an intensely ^{18}F-fluorodeoxyglucose avid mass (maximal standardized uptake value 13.1) on the left atrium. 3D volume-rendered computed tomography angiography showing neoplastic compression of the LAD branch in the oblique-axial plane (**C**). Histopathological evaluation showing ML characterized by signet-ring type lipoblasts, usually determining a low potential for metastasis (**D**). Transfemoral coronary angiography showing significant stenosis (the arrow) of the proximal LCx (**E**), followed by percutaneous coronary intervention with implantation of a XIENCE Sierra™ stent (Abbott Cardiovascular, Nathan Lane North Plymouth, MN, US) (**F**)

Abbreviations: LAD, left anterior descending; LCx, left circumflex; LV, left ventricle; ML, myxoid liposarcoma

did not worsen his cardiological symptoms at subsequent clinical follow-up.

Liposarcomas are the second most common type of soft tissue sarcomas. Primary mediastinal liposarcomas represent <1% of all mediastinal tumors, just as myxoid subtypes of mediastinal liposarcomas are the rarest in this category [3]. Myxoid liposarcoma mostly has expansive growth, thus it tends to give more easily late-onset compression symptoms compared to other mesenchymal malignancies, which results in poor prognosis [4].

Primitive myxoid liposarcoma has never been responsible for coronary compression till now. Just a single case of non-ST-segment elevation MI by metastatic myxoid liposarcoma effectively treated with palliative implantation of two bare metal stents has been reported [5]. Conversely, despite the absence of a consensus on management of neoplastic extrinsic compression, a PCI with drug-eluting stent deployment has already turned out to be effective against other primitive malignancies.

Article information

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