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Leukemic Blast Clot Causing ST-Segment Elevation Myocardial Infarction

Emmanouil Skalidis, MD, PhD,[a] Ioannis Anastasiou, MD,[a] Ioannis Konstantinou, MD,[a] Stylianos Petousis, MD,[a] Eleni Papadaki, MD, PhD,[b] Elias Drakos, MD, PhD,[c] Fragiskos Parthenakis, MD, PhD[a]

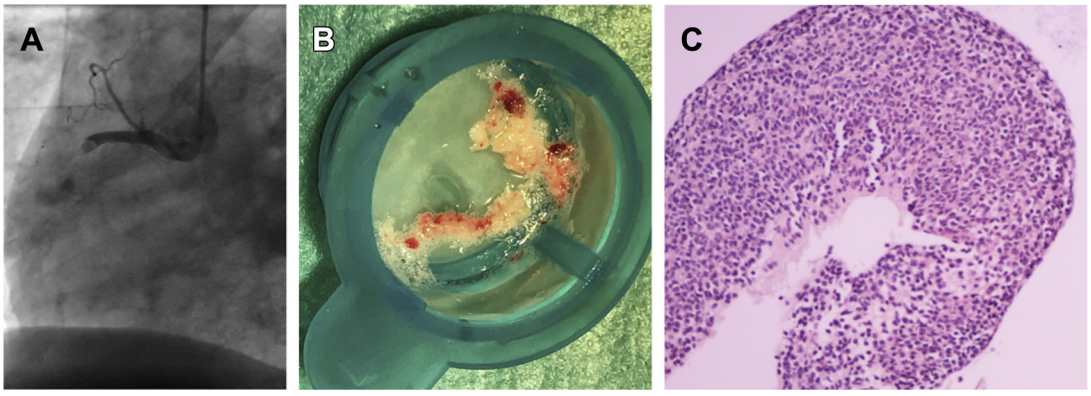
A 61-year-old man with a history of smoking (30 pack-years) and dyslipidemia presented with inferior ST-segment elevation myocardial infarction 2 h after symptom onset and was transferred to the cardiac catheterization laboratory for primary percutaneous coronary intervention. Coronary angiography revealed proximal right coronary artery occlusion (Figure 1A). Transcatheter aspiration—which led to flow restoration—yielded a bright-yellow-colored material (Figure 1B). Due to its unusual appearance, the specimen was sent for histological examination, which revealed a cellular clot composed of large mononuclear blastic cells instead of platelets (Figure 1C).

The patient was subsequently diagnosed with acute myeloid leukemia FAB M4 (acute myelomonocytic leukemia), and appropriate treatment was started.

The association between acute myeloid leukemia and thrombotic events is well known and multifactorial; presentation with acute myocardial infarction is, however, rare.

Proposed possible underlying mechanisms in leukemia-associated myocardial infarction include

FIGURE 1 Coronary Angiography, Aspiration Material, and Clot's Histology



(A) Right coronary artery angiography showing total occlusion of the vessel. **(B)** Aspiration material; macroscopic appearance. **(C)** Histological examination (hematoxylin and eosin stain) showing abundant leukemic blast cells and a paucity of platelets.

From the [a]Department of Cardiology, University Hospital of Heraklion, Heraklion, Greece; [b]Department of Hematology, University Hospital of Heraklion, Heraklion, Greece; and the [c]Department of Pathology, University Hospital of Heraklion, Heraklion, Greece.
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occlusion of coronary arteries by leukemia-associated thrombus (1), infiltration of coronary artery wall by leukemic cells (2), leukostasis syndrome (3), and disseminated intravascular coagulation (1), as well as leukemia-related hyperhomocysteinemia (4).

To the best of our knowledge, this is the first report of ST-segment elevation myocardial infarction caused by a material histologically proven to mainly consist of leukemic blasts.

ADDRESS FOR CORRESPONDENCE: Dr. Emmanouil Skalidis, Department of Cardiology, University Hospital of Heraklion, Voutes and Stavrakia, Heraklion, Crete 71409, Greece. E-mail: skalides@uoc.gr.

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