Acute myocardial infarction caused by coronary tumour embolism

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A 78-year-old male patient with advanced lung cancer and liver metastasis was admitted to our hospital because of persistent and critical hyperkalaemia (5.1–7.1 mEq/L), probably caused by tumour lysis syndrome. He had a history of myocardial infarction and arteriosclerosis obliterans. Echocardiography showed akinesis of the cardiac apex, reflecting old infarction. His hyperkalaemia was accompanied by elevated levels of aminotransferases and lactate dehydrogenase. Because his disease was an incurable malignancy, palliative care was chosen for his treatment. Although no electrocardiographic abnormalities associated with hyperkalaemia were detected during hospitalization, he suffered sudden death due to ventricular fibrillation. The clinicians suspected that the uncontrolled hyperkalaemia had induced this fatal arrhythmia. An autopsy was performed in which the lung cancer (pleomorphic carcinoma) with extensive blood-borne metastases was confirmed. Fresh myocardial necrosis was found to be superimposed on an area of fibrosis corresponding to old infarction in the left anterior wall (Panel A, arrowheads). This finding suggested that the precise cause of death was not hyperkalaemia but rather acute myocardial infarction. We then investigated the coronary arteries thoroughly to identify a culprit vascular lesion (Panel B). Surprisingly, a mixture of blood clot and tumour cell aggregation (Panels C and D) occluded the left anterior descending artery (Panel B, asterisk). We surmised that coronary tumour embolism was a primary reason for his sudden death.

Tumour embolism is an extremely rare cause of acute myocardial infarction. However, clinicians should recognize it as a potential aetiology of acute coronary syndrome.