Invasive cardiac aspergillosis presenting as complete heart block in a patient with acute lymphoblastic leukaemia

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A 56-year-old man admitted to our Haematology Department for acute lymphoblastic B-cell leukaemia underwent intensive induction chemotherapy, which was complicated by ethmoidal and bronchopulmonary aspergillosis.

In the post induction chemotherapy period, he presented with chest pain and bradycardia (40 bpm). An electrocardiogram (EKG) showed complete heart block and 1 mm ST-segment elevation in the inferior leads (Panel A). Coronary angiogram revealed a distal chronic occlusion (non-culprit lesion) of the first obtuse marginal branch (Panel B). Transthoracic and transoesophageal echocardiogram revealed preserved left ventricular ejection fraction, nodular hypoechogenic regions at the basal segments of the infero-septal, antero-lateral, and infero-lateral walls, a vegetation at the tricuspid valve and a moderate pericardial effusion (Panels C–F). Cardiac magnetic resonance revealed hypointense nodular regions in steady-state free precession images (Panel G) and hyperintense in T1- and T2-weighted imaging within the same walls (Panels H and I). A presumptive diagnosis of invasive cardiac aspergillosis was made and the patient was started on amphotericin B and posaconazole, which led to complete recovery from the rhythm disturbance. The patient completed chemotherapy and achieved complete haematological remission.

Six months after completion of the antibiotic therapy, the patient was asymptomatic and on complete haematological remission. Transthoracic echocardiogram revealed only two small residual nodular hypoechogenic lesions in the basal segment of the antero-lateral wall and preserved left ventricular ejection fraction (Panel J).

Invasive cardiac aspergillosis is a rare disorder that affects the immunosuppressed patient with disseminated disease. Cardiovascular imaging is mandatory for its diagnosis and follow-up.

Panel A Twelve-lead EKG with complete heart block and 1 mm ST-segment elevation in inferior leads; (B) coronary angiogram demonstrating distal chronic occlusion of the first obtuse marginal branch (arrowhead); (C–E) transthoracic echocardiogram demonstrating nodular hypoechogenic regions at the basal segments of the infero-septal, antero-lateral, and infero-lateral walls (arrowheads) and a moderate pericardial effusion; (F) transoesophageal echocardiogram revealing a vegetation at the tricuspid valve (arrowhead); (G) cardiac magnetic resonance showing hypointense nodular regions in SSFP cine imaging within the inferior-septal, antero-lateral, and infero-lateral walls (arrowheads); (H) cardiac magnetic resonance showing hyperintense nodular regions in T1-weighted imaging within the inferior-septal, antero-lateral, and infero-lateral walls (arrowheads); (I) cardiac magnetic resonance showing hyperintense nodular regions in T2-weighted imaging within the inferior-septal, antero-lateral, and infero-lateral walls (arrowheads); (J) transthoracic echocardiogram (zoom) at 6-month follow-up showing small residual nodular hypoechogenic lesion in the basal segment of the antero-lateral wall. SSFP: steady-state free precession.

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