A rare case of multi-chambered fungal endocarditis from a virulent Cunninghamamella infection

Sanjay Dwarakanath*, Vikas Kumar, John Blackburn, and Manuel R. Castresana

Department of Anesthesiology and Peri-Operative Medicine, Georgia Regents University, Augusta, GA, USA

* Corresponding author. Email: sdwarakanath@gru.edu

A 60-year-old woman with graft-versus-host disease after bone marrow transplantation for myelodysplastic syndrome developed sudden onset of angina with elevated troponins raising suspicion for acute coronary syndrome. A left heart catheterization did not indicate any significant coronary artery disease. A transthoracic echocardiogram (TTE) revealed inferior wall hypokinesis with a large mass within the left ventricular (LV) cavity suggestive of thrombus or endocarditis. A recent TTE done 2 weeks back, however, had not shown any abnormalities. Within 24 h, the patient’s clinical status deteriorated dramatically, requiring emergent intubation and vasopressor support.

The patient was transported to the operating theatre for an emergency surgery for removal of the LV mass. After induction of general anaesthesia, baseline transoesophageal echocardiogram (TEE) examination revealed global LV hypokinesis with ejection fraction of 15–20%. An intracavitary LV mass was seen along with a new mass occupying a substantial portion of the Left Ventricle Outflow Tract (LVOT) (Panel A). Turbulence on colour flow Doppler was suggestive of LVOT obstruction (Panel B). Multiple mobile masses that were not present 24 h earlier were now seen attached to the free wall of the right ventricle (Panel C). TEE examination prompted the surgical team to perform a right atriotomy in addition to debridement of the LV via left atriotomy. The immediate pathological evaluation revealed fungal hyphae and later confirmed the diagnosis of a rare Cunninghamamella species. Panel D shows H&E stain of fungal hyphae obtained from LV mass (Panel E). Post-operatively the patient succumbed to disseminated intravascular coagulation and died in the intensive care unit within a few hours after surgery.

The rapidity of growth and involvement of multiple chambers could be suggestive of the virulent nature of this rare fungus urging maintenance of high suspicion in immune compromised patients and early administration of antifungal agents. Although epidemiology on geographical distribution is limited, predisposition of this pathogen to patients receiving deferoxamine and the presence around construction areas has been reported.