Unveiling the “3-noes” right-sided infective endocarditis: a diagnostic dilemma in a non-IVDU patient

Muhamad Rafiqi Hehsan, MMED[1,2], Rosnah Ab Latif, MMED[1], Melor Mohd Mansor, MMED[1], Halaa Burhanuddin, MMED[1,3]

[1]Hospital Ampang, Ampang, Selangor Darul Ehsan, Malaysia, [2]Faculty of Medicine, Universiti Sultan Zainal Abidin, Medical Campus, Kuala Terengganu, Terengganu Darul Iman, Malaysia, [3]Department of Anaesthesiology and Intensive Care, Institut Jantung Negara, Kuala Lumpur, Malaysia

SUMMARY

Right-sided infective endocarditis (RSIE) is a rare but potentially life-threatening condition, accounting for only 5–10% of all infective endocarditis (IE) cases. Traditionally, RSIE is linked to intravenous drug use (IVDU), intracardiac devices, or pre-existing cardiac abnormalities. However, an emerging subset of RSIE termed "3-Noes RSIE", defined by the absence of left-sided IE, IVDU, and intracardiac devices, thus presents a unique diagnostic challenge due to its atypical clinical manifestations. We present a 53-year-old Indonesian man with type 2 diabetes mellitus (T2DM) who presented with persistent fever. He denied any high-risk behaviour, IVDU, or prior cardiac history. Initial evaluation suggested community-acquired pneumonia; however, blood cultures later identified methicillin-susceptible Staphylococcus aureus (MSSA). Transthoracic echocardiography (TTE) detected a right ventricular mass, initially presumed to be a thrombus but later confirmed as vegetation. Despite not fully meeting Duke’s major criteria, a strong clinical suspicion guided the diagnosis of RSIE. The patient responded remarkably well to a two-week course of high-dose IV cloxacillin, achieving complete clinical resolution without surgical intervention. RSIE often mimics respiratory infections due to frequent pulmonary embolic complications, leading to delayed diagnosis. This case exemplifies the importance of considering RSIE in patients with persistent fever and bacteraemia, even in the absence of classical risk factors. The “3-Noes RSIE” phenotype is increasingly recognised in middle-aged, non-IVDU patients with healthcare-associated infections, particularly those with diabetes, which predisposes them to immunological compromise. Despite its rarity, early diagnosis and targeted antimicrobial therapy are critical to reducing morbidity and mortality.