## 18<sup>th</sup> Annual Cardiologists Conference

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### Case report: Prosthetic aortic valve endocarditis with aortic root abscess secondary to non-tuberculous mycobacterium

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Ton-tuberculous mycobacterium is uncommon causative organism of prosthetic infective endocarditis, but over the N course of the recent years, the incidence of mycobacterial endocarditis significantly increased with often poor response to antimicrobial therapy as a result many patients have had a surgical intervention, therefore it is considered to be a serious cardiovascular condition that factually associated with high morbidity and mortality. The aortic, mitral and tricuspid valves were the most commonly affected sites of mycobacterial endocarditis. There are many risk factors that can predispose to infective endocarditis, the common observed risk factors include, congenital heart diseases, implanted medical devices insertion, various cardiothoracic operations as well as immune-compromised patient. The incidence of infective endocarditis is 2 to 10 episodes per 100,000 person-years in most population-based studies, and the incidence is higher in elderly population of up to 20 episodes per 100,000 person-year in the elderly. Non-tuberculous Mycobacterium considered to be an opportunistic pathogen and the most slowly growing species are the M. avium-intracellular complex. Rapidly growing non-tuberculous mycobacteria are more sensitive to antibiotics than slowly growing mycobacterium. CDR-IE is defined as infection extending to the electrode leads, cardiac valve leaflets or endocardial surface3. The isolated pocket infection is clinically suspected in the presence of local signs of inflammation at the site of the device; these signs are including warm site, redness, wound dehiscence, tenderness, erosion or purulent drainage. Generally speaking, the infection of the cardiac implantable devices is a dreadful. The incidence of CIEDs infection in a population-based study is 1.9 per 1000 device-year with a higher probability of infection after implantable cardioverter defibrillator (ICD) compared with permanent pacemaker (PPM) implantation.

Case Presentation: A 58 years old female with recurrent history of infective endocarditis, first episode manifested two months following a metallic aortic valve replacement that she had undergone due to congenital bicuspid aortic valve. Patient presented with one-month history of exertional dyspnoea, chest tightness, fever, rigors, night sweat and general malaise, during the course of her hospital admission she has spiked high grade temperature several times whilst on the empirical antimicrobial therapy for infective endocarditis. On clinical examination of cardiovascular system there were no signs of heart failure, normal first heart sounds with ESM and metallic click on the second heart sounds. Other systemic examination findings were unremarkable. ECG showed first degree heart with LBBB. Her blood result on admission have shown raised inflammatory markers and serial of consecutive blood culture were negative, CXR showed no abnormality. Transoesophageal echocardiography infective confirmed abnormal looking aortic valve with typical appearance of aortic root abscess and significant vegetation with moderate aortic valve insufficiency. The patient had to undergone an urgent Re-do aortic valve replacement with extensive aortic root reconstruction, the cultivated sample of the removed aortic valve and the aortic wall tissue has confirmed the diagnosis of mycobacterium avium-intracellular complex with histo-pathological picture that in favour of the diagnosis of acute necrotizing mycobacterial endocarditis. Postoperatively, the patient has developed acute kidney injury and liver impairment as part of cardio-renal syndrome that warrant an admission to the intensive care unit for hemofiltration and inotropic support. The patient hospitalised again during the course of her treatment with severe myocardial infarction and she passed away due to cardio-respiratory arrest.

**Discussion:** Prosthetic mycobacterial endocarditis infection is usually refractory to antimicrobial therapy partly due to the difficulty identifying the pathogen as this may require multiple laboratory test before reaching the diagnosis e.g. blood culture, chromatographic techniques, histological staining or molecular analyses. Prosthetic mycobacterial endocarditis still rare compare to other pathogens, therefore there is a lack of elaboration on the literature review, it was noted that there is a shorter latency with endocarditis following cardiac procedures than others predisposing risk factors as demonstrated in this case. The

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majority of patients commonly present with symptoms of fever (from low grade to high grade temperature), dyspnoea and chest pain, often the duration of the symptoms vary from acute onset in few days to slowly progressing disease over the course of months or years. The diagnosis of PVE is a difficult one to establish however the recent European Society of Cardiology (ESC) guidelines emphasised that it is very important to use the new radiological imaging techniques like nuclear medicine imaging, whole body MRI and cardiac CT scan to aid the diagnosis of PVE and to discover peripheral embolic event. The initial treatment started in this case was empiric antimicrobial therapy as per the local hospital guideline, later the patient switched on specific anti-mycobacterium antibiotics as per the antimicrobial susceptibility test, which was in form of clarithromycin, rifampicin and ethambutol for period of 12 months. Antimicrobial therapy with prolonged duration of treatment is often the regimen of choice, amikacin and imipenem have been proved to be effective agents for the disseminated disease. Due to the rarity of the mycobacterium PVE, the condition remains a challenge to the clinician in terms of both diagnosis and treatment, largely due to poor pathogen identification and late presentation that leads to substantial delay in the diagnosis and the subsequent management. This case illustrated the importance of spotting the diagnosis at earlier stage, as every effort should be made to spot and predicts the diagnosis to enable prompt management and minimizing the subsequent complications for better prognosis. Both medical and surgical management may be vital to achieve good outcome.

#### Biography

Amjed Eljaili completed MBBS on October 2010 from University of Al-Zaiem Al-Azhari, Sudan, currently practicing in UK, Wales deanery, foundation year-2 trainee, BCUHB, emergency department. He attended several academic meetings, regionally and nationally, He has participated in various national work-shops, congress participation and membership with British Institute of Radiology, UK.

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