Acute inflammatory aortitis: utility of hybrid imaging with positron emission tomography/computed tomography in diagnosis and follow-up

Eric T. McWilliams¹*, Katarzyna K. Dickinson¹, David M. Walker¹, and Vivek Raman²

¹Cardiology Department, Conquest Hospital, The Ridge, St Leonards-on-Sea, East Sussex TN37 7RD, UK and ²Radiology Department, Royal Sussex Hospital, Brighton, UK

* Corresponding author. Tel: +44 1424755255 ext. 8724; fax: +44 1424758132, Email: eric.mcwilliams@gmail.com

A 63-year-old lady presented with abdominal pain, night sweats, and headache. She had a maculopapular rash, diastolic murmur, and fever. Urinalysis was positive for blood and she was treated as endocarditis. Transoesophageal echocardiography (TOE) revealed small mobile densities on the aortic leaflets (Supplementary data online, Video S1), suspicious for vegetations and moderate regurgitation. Blood cultures were negative and she continued to spike fevers with elevated inflammatory markers despite prolonged antibiotics. Erythrocyte sedimentation rate (ESR) was 135 mm/h. There was no temporal artery tenderness. Positron emission tomography/computed tomography (PET/CT), using F¹⁸ Flurodeoxyglucose (FDG¹⁸) showed intense uptake of FDG¹⁸ involving the ascending aorta, arch, and descending aorta to the iliac bifurcation (Panels A and B). Temporal artery biopsy revealed low-grade arteritis with mononuclear infiltrate but no giant cells (Panel C). Repeat PET/CT after high-dose steroids demonstrates dramatic resolution of FDG¹⁸ uptake (Panel D). Repeat TOE has shown resolution of the vegetation-like structures on the aortic leaflets and progressive aortic regurgitation (Supplementary data online, Video S2). She is being maintained on prednisone and azathioprine with excellent symptomatic improvement.

Based on the American College of Rheumatology classification criteria of giant cell arteritis (GCA), this patient can be diagnosed with GCA based on age of onset >50 years, ESR > 50 mm/h, and abnormal artery biopsy, with a sensitivity of 94% and a specificity of 91%.

FDG¹⁸ PET/CT imaging can be very useful in such cases to aid diagnosis and monitor response to therapy. This case is a reminder that aortitis can have an acute presentation which can mimic endocarditis.

Supplementary data are available at European Heart Journal – Cardiovascular Imaging online.

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