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Prosthetic valve endocarditis: a combination of clinical findings and advanced imaging

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Case description

A 52-year-old woman presented to our hospital with fever (40.3°C) and shivering. Triple valve replacement surgery [mechanical aortic (Carbomedics 23 mm) and mitral (Carbomedics 27 mm) prostheses, and biological tricuspid prosthesis (Carpentier-Edwards Perimount Magna 27 mm)] was performed more than 20 years earlier because of severe rheumatic heart disease. Physical examination at admission was unremarkable (blood pressure 105/54 mmHg, heart rate 74/min, and SpO_2 96%) with no hints for a specific focus. Cardiac auscultation revealed normal prosthesis closing sounds and no murmurs. Inflammation parameters were slightly elevated (leucocytes 11.3 g/L and C-reactive protein 30 mg/L), blood cultures were collected, and empiric antibiotic treatment started. Two days later, the patient developed Osler's nodes, Janeway's lesions, and splinter haemorrhages on both hands (*Figure 1A*). Blood cultures (six of six sets) turned positive at Day 3 for *Streptococcus dysgalactiae*. Repetitive transoesophageal echocardiography did not show typical signs of PVE. Cardiac ^{18}F-fluorodeoxyglucose (FDG)–PET/CT scan on Day 8 revealed increased uptake in the paravalvular space confirming PVE of the three prostheses (*Figure 1B*).

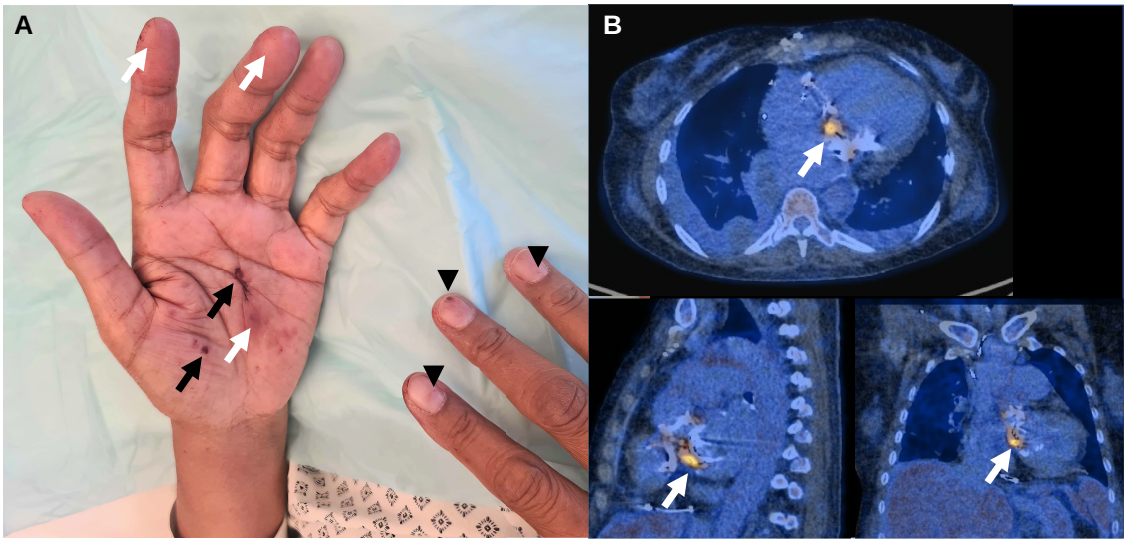

Figure 1 (*A*) Osler's nodes (*white arrow*), Janeway's lesions (*black arrows*), and splinter haemorrhages (*arrowheads*). (*B*) Cardiac positron emission tomography/computed tomography scan showing increased ^{18}F-fluorodeoxyglucose uptake in the paravalvular space.

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Our case highlights the importance of careful skin examination in patients with fever and valve prosthesis. Osler's nodes (*white arrow*) and Janeway's lesions (*black arrows*) are separate minor Duke criteria since they have been historically considered as distinct immunologic and vascular phenomena, respectively.[1] To date, it has been recognized that both entities result from septic emboli causing dermal micro-abscesses. Osler's nodes are tender when localized on fingers and toes, and Janeway's lesions involve palms and soles and have haemorrhagic appearance.[2] Splinter haemorrhages (*arrowheads*) are not part of the Duke criteria.

The modified Duke criteria are the mainstay of diagnosis for infective endocarditis but their diagnostic accuracy for PVE is limited by frequent inconclusive echocardiographic results, in particular at early stages. Advanced imaging modalities such as FDG–PET/CT have recently gained importance providing excellent diagnostic performance in PVE.[3] Abnormal paravalvular FDG uptake is recognized as a major Duke criterion in the European Society of Cardiology guidelines.

As illustrated in this case, the diagnostic process in suspected PVE still follows the integration of physical findings, laboratory data, and modern imaging technology. The presence of typical skin findings—despite low prevalence <10%—should increase the suspicion of PVE and act as gatekeeper for more sophisticated investigations such as FDG–PET/CT.

Consent: We confirm that informed written consent for submission and publication of this case report has been obtained from the patient in compliance with the COPE guidelines.

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Data availability

No new data were generated or analysed in support of this research.

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