Septic pulmonary embolisms and metastatic infections from methicillin-resistant *Staphylococcus aureus* endocarditis on FDG PET/CT

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A 59-year-old immune-compromised woman after non-meloablative allogeneic stem cell transplantation for myelodysplastic syndrome, was admitted with methicillin-resistant *Staphylococcus aureus* sepsis related to a Hickman catheter. Despite aggressive antibiotic therapy and catheter removal, blood cultures remained positive and her dyspnoea continued unabated. Subsequent transoesophageal/transsthoracic echocardiography demonstrated infective endocarditis with a focal vegetation (10 × 4 mm) on the posterior leaflet, a perforation in the 2-3 section of the posterior leaflet and severe mitral regurgitation (4/4).

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She was then referred for a PET/CT scan with ^{18}F -FDG to rule out septic embolism and metastatic infection. The coronal maximum intensity projection image (a) revealed focally increased uptake in the left ventricle (dashed arrow). In addition, numerous hypermetabolic small nodules were scattered throughout both lungs, and hypercaptation was seen around the left hip and right shoulder (arrows). PET, CT and fused PET/CT images localized the increased myocardial uptake to the mitral valve (b) and pulmonary FDG uptake projected onto multiple parenchymal nodules, some with central excavation (c). The periarticular uptake corresponded to septic arthritis of the acromioclavicular joint extending into the supraspinatus tendon and a collection within the quadratus femoris muscle (d). These imaging findings are characteristic of infective endocarditis with septic pulmonary embolisms and metastatic muscle abscesses and septic arthritis.

Acute infective endocarditis is a potentially life-threatening disease with an outcome that depends on the presence of systemic embolization and extracardiac infections. This case illustrates the power and value of PET/CT in assessing extracardiac complications.