

18F-Fluorodeoxyglucose Positron Emission Tomography: a Useful Tool for the Diagnosis of Endocarditis in a Boy with Congenital Heart Disease: a Case Report

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Abstract

Actinobacillus actinomycetemcomitans is a Gram-negative coccobacillus responsible for blood culture-negative endocarditis. This type of endocarditis is difficult to diagnose because of its insidious evolution and variability of symptoms. Moreover, valvular vegetation may be challenging to detect by echocardiography, especially in children with congenital heart disease. 18F-fluorodeoxyglucose positron emission tomography is frequently used as an additional diagnostic tool for infectious endocarditis in adult patients, and has proved efficient, especially for prosthetic valves. However, its value has been rarely described for the diagnosis of infectious endocarditis in children with congenital heart disease. The authors report the case of an 11-year-old boy with congenital aortic stenosis, who developed severe anemia, thrombocytopenia, hepatosplenomegaly, acute kidney injury, and biological signs of inflammation, with only very mild fever. Renal biopsy revealed the presence of crescentic glomerulonephritis. Transthoracic and transoesophageal echocardiography did not show any vegetation. An 18F-fluorodeoxyglucose positron emission tomography was performed and revealed abnormal 18F-FDG uptake in the area of the aortic valve, supporting the hypothesis of infectious endocarditis. The patient underwent cardiac surgery for the reparation of the aortic stenosis and calcified vegetation was found and resected from the aortic valve. One blood culture yielded *Actinobacillus actinomycetemcomitans* after 20 days. However, the PCR for the 16S rRNA gene on the resected vegetation was negative. He was treated with 4 weeks of parenteral antibiotics. Follow-up showed the resolution of the clinical and biological abnormalities within a few days. Blood culture-negative endocarditis should be considered in a child with multiorgan manifestations, such as thrombocytopenia, hepatosplenomegaly, and glomerulonephritis. Because echocardiography may not show valvular vegetation, especially in children with pre-existing valvular heart disease, 18F-fluorodeoxyglucose positron emission tomography can be useful to confirm the diagnosis of endocarditis in these patients.