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# **Endomyocardial fibrosis presenting as apical calcification and infective endocarditis**

## **Short title: Endomyocardial fibrosis with infective endocarditis**

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## Abstract

A 46-year-old woman was admitted for suspected infective endocarditis. Echocardiography showed a mobile mass attached to the thickened endocardium of the left ventricular apex. Histological examination showed extensive endomyocardial fibrosis.

**Keywords:** endomyocardial fibrosis, apical calcification, infective endocarditis,  $^{18}\text{F}$ -fluorodeoxyglucose positron emission tomography

## Case

A 46-year-old woman with systemic lupus erythematosus was admitted for suspected infective endocarditis caused by *Streptococcus sanguis*. She was diagnosed with apical hypertrophic cardiomyopathy 5 years ago, when gadolinium-enhanced cardiovascular magnetic resonance imaging showed subendocardial hyperenhancement in the left ventricular (LV) apical and lateral walls (**Panel A, Online Video 1**),  $^{18}\text{F}$ -fluorodeoxyglucose (FDG) positron emission tomography/computed tomography showed abnormal FDG uptake (maximum standardized uptake value [SUVmax] of 6.2) located in the same area (**Panel B**).

Transesophageal echocardiography on admission revealed a small mobile echo-dense mass attached to the thickened endocardium of the LV apex (**Panel C, Online Video 2-3**), which was consistent with infective endocarditis. Three weeks after antibiotic treatment,

repeat echocardiography showed an increase of vegetation size (20 mm in diameter, **Panel D**, **Online Video 4-5**), indicating persisting infection. She underwent urgent surgery consisted of removing the vegetation (**Panel E, arrow**) and thickened endocardium with calcification. Histological examination showed extensive endomyocardial fibrosis (**Panel F**) and inflammatory cell infiltration without cardiomyocyte hypertrophy (**Panel G**), which allowed the diagnosis of infective endocarditis complicating endomyocardial fibrosis. She was discharged after 12 weeks of antibiotic treatment. Myocardial FDG uptake remained constant at 4 weeks and 1 year after surgery (SUVmax of 4.3 and 6.9, respectively; **Panel H**) but decreased 2 years after surgery (SUVmax of 2.6, **Panel I**). To our knowledge, infective endocarditis in LV apical calcification has not been reported so far. This case also illustrates that how subclinical myocardial inflammation can cause endomyocardial fibrosis with calcification mimicking apical hypertrophic cardiomyopathy.

