A 45-year-old man was admitted due to fever and chills, and blood cultures were positive for *Streptococcus mitis*. Echocardiography revealed a mobile vegetation of 6 mm on the ventricular aspect of the anterior mitral leaflet, a three-leaflet aortic valve with a lack of co-optation, and a moderate aortic regurgitant jet directed towards the anterior mitral leaflet (Panel A, and see Supplementary data online, Video S1A and B). The patient was treated with ampicillin and gentamycin for 1 week and was discharged for home-based ceftriaxone treatment. One week later, he was admitted again with recurrent chills, temperature of 38.5°C, and C reactive protein of 153 mg/L, and CT scan of the head and abdomen was normal. Echocardiography revealed significant aortic regurgitation, the vegetation on the mitral valve grow up to 1.1 cm (Panel B, and see Supplementary data online, Video S2A and B). Urgent surgery was considered, but patients’ condition improved with switch to penicillin and gentamycin. A follow-up echocardiogram before planned discharge detected a mobile echodense vegetation (Panel C, and see Supplementary data online, Video S3A and B). On the next day, the 30th day since the initial presentation, the patient complained of severe pain in his right thigh. Echocardiography was remarkable for the absence of vegetation (Panel D, and see Supplementary data online, Video S4A and B). Septic emboli was suspected and the Gallium-67 citrate SPECT and low-dose CT showed pathological uptake in the right side of sacrum and in the right thigh (Panels E–G), consistent with pelvic osteomyelitis and infection of soft tissue of the right thigh. The patient was treated conservatively. This is an unusual case of late septic emboli 1 month after the beginning of appropriate antibacterial therapy.