



Acute Embolic Stroke as the Sole Presentation of Infective Endocarditis in Mitral Valve Prolapse

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ABSTRACT

Case: A 43 yo. male was hospitalized with acute drowsiness and left-sided hemiparesis. Stroke was confirmed by head CT scan. Diagnosis of definite infective endocarditis (IE) was made by 1 major criterion (vegetation at mitral valve on echocardiography) and 3 minor criteria (mitral valve prolapse, persistent fever, and stroke). However, blood cultures were negative presumably due to early antibiotics administration. He was treated with parenteral antibiotics for 10 days, and continued with outpatient parenteral antibiotic therapy (OPAT). A clinical improvement was observed. **Conclusion:** Acute stroke can be an early manifestation of IE without any cardiac symptoms.

Keywords: Acute stroke, infective endocarditis, mitral valve prolapse

ABSTRAK

Kasus: Laki-laki usia 43 tahun masuk rumah sakit dengan penurunan kesadaran dan hemiparesis sinistra. *CT scan* kepala sesuai gambaran *stroke* non-hemoragik. Diagnosis endokarditis infeksi ditegakkan berdasarkan kriteria Duke, yaitu 1 kriteria mayor (vegetasi katup mitral pada ekokardiografi) dan 3 kriteria minor (prolapsus katup mitral sebagai faktor predisposisi, demam menetap, dan *stroke*). Hasil kultur darah negatif dapat disebabkan pemberian antibiotik dini. Pasien diterapi dengan antibiotik parenteral selama 10 hari di rumah sakit dilanjutkan pada rawat jalan. Kondisi klinis pasien membaik. **Simpulan:** *Stroke* akut dapat merupakan manifestasi awal endokarditis infeksi, meskipun tanpa keluhan jantung. **Andreas Hartanto Santoso, Leonardo Paskah Suciadi, Frandy Susatia. Laporan Kasus: Stroke Emboli Akut sebagai Presentasi Tunggal Endokarditis Infektif pada Prolapsus Katup Mitral**

Kata kunci: Endokarditis infeksi, prolapsus katup mitral, *stroke* akut

INTRODUCTION

Infective endocarditis (IE) is an infection of the heart endocardium, which may include one or more valves. The risk of infective endocarditis (IE) in patients with mitral valve prolapse is estimated to be five to eight times higher than in patients with a normal mitral valve.¹ Thromboembolic events are common manifestation of IE. Neurological complications are the most frequent extracardiac complications of infective endocarditis (IE), dominated by stroke with high mortality. Acute embolic stroke occurs in 15-30% case of IE.²

We reported a case of acute stroke as the sole presentation of IE.

CASE

A 43 y.o. male was hospitalized with drowsiness and left-sided hemiparesis onset a

day before. There had been flu-like syndrome and low-grade fever for one week. He was previously healthy with normal daily activities.

All baseline investigations including liver and kidney function were unremarkable except WBC count 15200/ul and erythrocyte sedimentation rate was 106 mm/hour. Head CT scan showed cerebral infarction at right lateral periventricular and basal ganglia, suggestive for embolic cause. He was treated with neurology drugs and intravenous ceftriaxone.

Three days after hospitalization, a consultation to cardiologist revealed stable hemodynamic, with 140/90 mmHg blood pressure, cardiac frequency 110 bpm, and fever 38.2 °C. There were holosystolic murmur gr.3/6 at apex radiated to left axilla with blowing quality, and clear lung field. Poor oral hygiene was also

noted. No signs of infective endocarditis such as purpura, Osler nodes, Roth spots, Janeway lesions or splinter hemorrhages were found on examination.

Transthoracic echocardiography was done, and showed a prolapse of posterior mitral leaflet with an oscillating vegetation (size 4-5 mm) and moderate mitral regurgitation. Blood culture from four different access sites and timing were negative. The diagnosis of infective endocarditis with the complication of an embolic stroke was made.

He was treated with ceftriaxone 2 g iv once per day, gentamycin 160 mg iv once per day, and ramipril 2.5 mg PO twice per day. The general clinical status and neurologic functions were improved, heart compensated, and no further complications on echocardiography evaluation. Last

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LAPORAN KASUS



transthoracic echocardiography evaluation at the hospital showed moderate mitral regurgitation (PISA rad 0.637, VC 5.7 mm, EROA 0.26 cm², Regurgitant volume 35 mL, well contracted left ventricular), oscillating vegetation at mitral valve with similar size, and no abscess nor pseudoaneurysm. He was discharged after 10 days hospitalization, and continued to get outpatient parenteral antibiotic therapy (OPAT) to complete 2-week duration of antibiotic coverage. At the last follow up, he presented with minimal hemiparesis, no fever or heart failure symptoms, and echocardiography showed normal left atrial and left ventricle size, normal left ventricle systolic function (LVEF 75%), moderate mitral regurgitation, vegetation at mitral valve (+). Antibiotic was stopped and stroke rehabilitation program was continued.

DISCUSSION

Regarding Duke's criteria for IE diagnosis, this patient has definite IE based on 1 major criterion (echo findings) and 3 minor criteria (mitral valve prolapse as the predisposition, prolonged fever, and embolic stroke).³ The patient had mitral valve prolapse which is estimated to be five to eight times riskier to get IE than patients with a normal mitral valve. Poor oral hygiene was considered as the potential source of bacteremia, with *Streptococcus viridans* was the likely causative agent.⁴ However, negative blood culture was common because of early

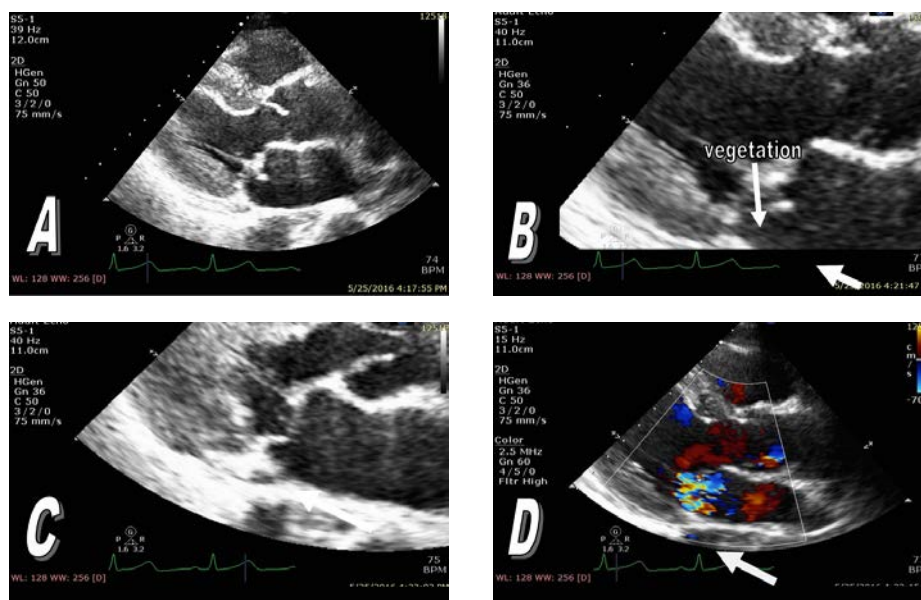


Figure. PLAX view (A) and the zoom view (B) showed vegetation at mitral valve. From the same view, severe prolapse of posterior mitral leaflet (C) with eccentric mitral regurgitation (D) can be identified.

antibiotic administration,³ such as in this case. Intravenous antibiotics were the mainstay of therapy in IE; The AHA guidelines recommend gentamicin plus either aqueous crystalline penicillin G or ceftriaxone for two weeks.⁵ Evaluation of cardiac function and other complications is also important for the outcome. Conservative therapy was favorable for a stable patient.⁵ The patient should be treated in hospital during the critical phase of IE (the first 1-2 weeks), and OPAT (Outpatient Antibiotic Therapy) can be considered after

that period if the clinical condition is stable and infection is controlled.⁵ Recurrent IE and/or embolic events and heart failure were the potential complications for this patient.¹

CONCLUSION

Diagnosis of IE should be considered in embolic stroke case in a relative young patient without any clear causes, especially if fever persists. Early diagnosis and antibiotic treatment are important to outcome.⁶

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