International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2016): 79.57 | Impact Factor (2015): 6.391

Acute Cerebral Infarction and Cerebellar Abscess in the Patient with Infective Endocarditis Developing from the Dialysis Catheter

Remziye Ayşenur Nalbant[1], Ilke Kupeli[2]

[1]MD, Erzincan University, Anesthesology and ReanimationDepartment, Erzincan, Turkey

[2]Assist. Prof. Erzincan University, Anesthesology and Reanimation Department, Erzincan, Turkey

Abstract: ***Infective endocarditis (IE) is infection of the endocardial surface of the heart, often affects the cardiac valves, and can involve the septal defects or mural endocarditis. Although IE is rare, it is still an important disease because it is difficult to diagnose and treat it and it leads to high morbidity and mortality. Diabetes, advanced age, chronic renal failure requiring dialysis, and staphylococcus aureus endocarditis are important elements contributing to mortality. In this case, an acute cerebellar abscess and infarction were discussed in a 49-year-old man with chronic renal failure who underwent hemodialysis for 9 months and was diagnosed with IE induced by jugular vein catheter.***

Keywords: S. aureus, Infective endocarditis, chronic hemodialysis, cerebral infarction, cerebellar abscess

1. Introduction

Infective endocarditis (IE) is infection of the endocardial surface of the heart, often affects the cardiac valves, and can involve the septal defects or mural endocarditis. Although IE has been a disease known for many years and has undergone many advancements in its diagnosis and treatment, itshows a mortality rate as high as 20% even in developed countries where access to all medical facilities is possible. This rate is about 30% in Turkey[1]. The cause of 80% of IE cases isstreptococcus and staphylococcus species. In recent years, staphylococci have been the most common causes of many IE types [1]. Although IE is rare, it is still an important disease because it is difficult to diagnose and treat it and it leads to high morbidity and mortality. Mortality is higher in patients with diabetic, chronic renal failure requiring hemodialysis and immunosuppression, visible valve vegetations and other preparatory diseases such as especially those infected with methicillin-resistant staphylococcus aureus [2]. IE develops in 2-6% of patients undergoing chronic hemodialysis[3]. The aim of this case report was to discuss acute cerebellar abscess and infarction developing in a 49-year-old male who had chronic renal failure and diabetes mellitus, was receiving hemodialysis for 9 months, and was diagnosed with jugular vein catheter induced IE.

2. Case Report

A 49 year-old male patient had known diabetes mellitus, hypertension, schizophrenia, and chronic renal failure for nine months. 2 weeks ago, he received the antibiotherapy in the Infectious Diseases clinic due to transient dialysis catheter infection in the right jugular vein and he was discharged upon the completion of treatment. Afterwards, when he applied again with the complaint of fever, he was consulted to cardiology clinic with IE pre-diagnosis and he was diagnosed with IE due to the development of vegetation on the aortic valve in the transthoracic echocardiography. After taking blood culture from him in the cardiology service, 1 gr of vancomycin was started to be given to the patient every four days until the results were obtained but upon the MRSA growth in blood culture, the treatment continued with 500 mg 1x1 daptomycin. The patient undergoing dialysis three times a week in this period was evaluated by our clinic on the 9th day of admission in the cardiology department after having confusion in consciousness, tachypnea, and fever. The patient assessed in the service was ventilated with gc: poor, consciousness: confused, mask with 6 lt/min O_2. TA: 120/80, pulse:80, SaO2: 95%, andrespiratory rate was 20. In the obtained blood gas, PH: 7.58 PO2:130, PC02: 12.7 HCO3:12 lactate: 1.3;in biochemistry, BUN:137 Cr: 5.38 Na:135, K:4.0 Ca: 9.0 Alt:31, Ast:33;in hemogram, Wbc:21.6, Hgb:10.5, Plt:193000 Crp: 193 procalcitonin: 23, coagulation tests were normal. In order to eliminate the diagnoses of cerebral bleeding, cerebral infarction, bos obstruction, uremic encephalopathy, withdrawal syndrome, cerebral abscess due to sudden loss of consciousness, he hospitalized in reanimation unit for close follow-up and treatment after getting brain and thorax CT, brain MR. The patient was followed with 2 lt/min oxygen. In the patient who also had pneumonia, 500 mg daptomycin was interrupted due to infectious diseases, 500 mg 1x1 meropenem, 600 mg 4x1 klindan, and 1 gr vancomycin once every four days for lung infection were started. Clinics of neurology, brain surgery, chest diseases were consulted for the patient.

3. Radiological Results

In BRAIN DIFFUSION MR, hyperintensity, which was compatible with diffusion in the diffusion-weighed images in the cortical area of the right occipitotemperal area and in the cortical area in the right temporal lobe dorsal, was assessed in favor of acute infarct. In both occipitoparietal junctions, acute lacunar infarcts were present in the subcortical white matter.

Brain MR of the patient evaluated by clinics of neurology, neurosurgery, cardiology, cardiovascular surgery was

Licensed Under Creative Commons Attribution CC BY

interpreted as a 14-mm-diameter right cerebellar abscess and multiple infract and the treatment was reorganized. In the echocardiography report of the patient reassessed by cardiology clinic; 7x3 mm vegetation on aortic valve left coronary tricuspid ventricular surface andthird degree aortic insufficiency were interpreted as EF of 65%. Surgical intervention was not considered by the cardiovascular surgeon in terms of cardiac vegetations. The patient died in the reanimation unit on the 12th day of admission.

4. Discussion

Endocarditis can be classified as natural valve endocarditis, endocarditis seen in intravenous drug dependents and prosthetic valve endocarditis [4]. The cause in 20-30% of natural valve endocarditis is staphylococci and 80-90% of these cases are associated with S. aureus [5]. Endocarditis induced by staphylococci has high morbidity and mortality. Clinical picture in S. aureus endocarditis is acute. There are high fever, widespread muscle, joint pain and embolic findings. Embolic events may occur in early period and metastatic complications may be at the forefront [6]. In the present study, an acute picture developed depending on S. Aureus endocarditis in the patient.

Depending on the involved valve, physiological results can be predicted. Rarely a vegetation is too large to form a blocking or constricting function. More often, the tissue destruction process goes ahead and results in valve failure. As in our case, aortic valve disease has the worst prognosis due to a few reasons [7]. a) Heart can tolerate acute aortic regurgitation very little. b) If a sinus Valsalva aneurysm erode pericardium or right atrium, pericardial tamponade or left-right shunt may develop, respectively. c) If a myocardial abscess cover the heart conduction system, a heart block may developand d) it is very likely that the aortic valve ring vegetations enter the coronary arteries and form infarct in the muscles that are already functioning hard[7].

The vegetations themselves can be broken up in whole or in parts into the brain, organs (the spleen and kidneys are common targets), the coronary arteries and in the form of a large extremity artery embolism in the remarkable fungal endocarditis. Even though spleen abscess, brain abscess or even purulent meningitis can develop in staphylococcal endocarditis, emboli that can affect organs are generally in mild form. Additionally, the most commonly seen cerebral lesion is the embolic infarction showing itself with a stroke [7]. Acute cerebral infarction and cerebellar abscess also developed in our patient. Brain abscess is the suppurative processes localized in the brain parenchyma caused by bacteria, fungi or protozoa. Approximately one-third of the brain abscess is formed by hematogenous transmission of the factor from a distant focus of infection. [5,8]Brain abscess or purulent meningitis is most commonly seen in S. aureus endocarditis [4]. The picture may be accompanied by microembolus and cerebrovascular disease. Epileptic seizures of are likely to occur in patients who are exposed to brain abscess, but no seizure or nuchal stiffness was observed in our patient. In addition, changes experienced in consciousness can extend to coma. A decrease was also observed in glasgow coma scale during the following period in our patient.

Treatment in brain abscess may vary according to the severity of the complaints, the duration of the infection, and the size of the abscess [9].If the resultant abscess is life threatening, the abscess is discharged. The treatment type is selected according to the infection. If the infection is in early period, the problem can be controlled with antibiotic treatment. However, if the infection is advanced, surgical removal of the abscess is necessary. The antibiotherapy treatment was also seen appropriate for our patient.

5. Conclusion

In this case report, it was aimed to emphasize that prognosis can be rapidly worsened by the development of infective endocarditis in a young dialysis patient with chronic renal failure, diabetes mellitus, and all conditions that disrupt the clinic, including cerebellar abscess, should be emphasized. It should not be forgotten that especially the prognosis of S. aureus endocarditis is poor and the treatment that will cover this microorganism in the empirical antibiotic treatment should be given.

References

[1] Şimşek-Yavuz S. Infective Endocarditis: An Update. Klimik Journal 2015; 28(2): 46-67.
[2] Cabell CH, JollisJG, Peterson GE, et all: Changing patient characteristics and the effect of mortality in endocarditis Arch İntern Med 162-90, 2002
[3] Fefer P, RavehD, Rudensky B, et all : Changing epidemiology of infective endocarditis: a retrospective survey of 108 cases , 1990-1999 Eur/ Clin Microbiol Infect Dis: 21;432, 2002
[4] Kaye D. Infective endocarditis. In: Fauci AS, Braunwald E, Isselbacher KJ (eds). Principles of Internal Medicine. 14th ed. New York: The McGrow-Hill Companies 1998: 785-91.
[5] Korzeinowski OM, Kaye D. Endocarditis. In: Gorbach SL, Bartlett JG, Blacklow NR (eds). Infectious Diseases. 2nd ed. Philadelphia: WB Saunders 1998: 663-75.
[6] Carbon C, Chiodini PL, Hoiby N, et al. Staphylococcal endocarditis-recommendations for therapy. Clin Microb and Infect 1998; 4(Suppl 3): 27-33.
[7] Pruitt AA, Rubin RH, Karchmer AW, et all: Neurologic complications of bacterial endocarditis Medicine 57:329, 1978
[8] Scheld WM, Sande MA. Endocarditis and intravascular infections. In: Mandell GL, Bennett JE, Dolin R (eds). Principles and Practice of Infectious Diseases. 4th ed. New York: Churcill Livingstone 1995: 740-83
[9] Infective Endocarditis Due to Staphylococcus aureus:A Case Report with the Complications of Metastatic Abscess. www.ichastaliklaridergisi.org/fulltext.aspx?issue_id=41 &ref_ind_id=397.

Author Profile



Remziye Ayşenur Nalbant is graduated from Inönü Univercity Medical Faculty in 2013. She is working in Erzincan UnivercityAnestesiology and Reanimation since two years.

Licensed Under Creative Commons Attribution CC BY



Ilke Kupeli, graduated from Hacettepe Univercity Medical Faculty in 2009, During 2009-2014, she stayed in Çukurova UnivercityAnestesiology and Reanimation. She is working in Erzincan Univercity Anestesiology and Reanimation since 2014 .

Licensed Under Creative Commons Attribution CC BY