

arrhythmogenic susceptibility. Short-long-short sequences that led to TdP may have been the manifestation of triggered activity in our case. Therefore, we performed DDD-ICD implantation for the prevention of sudden cardiac death.

Conclusion

In this case, we emphasize the precise care of post-procedural TAVI patients. They are older and fragile; therefore, may be the candidates for arrhythmias. Despite the treatment of severe AS with either TAVI or surgery, a tendency toward arrhythmia may remain as the reverse remodeling process continues. Even after a successful intervention, an unexpected death can occur due to malignant arrhythmias.

References

1. Alsara O, AlSarah A, Laird-Fick H. Advanced age and the clinical outcomes of transcatheter aortic valve implantation. *J Geriatr Cardiol* 2014; 11: 163-70.
2. Turitto G, Haq S, Benson D, El-Sherif N. Torsade de pointes: an electrophysiological effect of cardiac resynchronization? *Pacing Clin Electrophysiol* 2006; 29: 520-2. [CrossRef]
3. Sweeney MO, Ruetz LL, Belk P, Mullen TJ, Johnson JW, Sheldon T. Bradycardia pacing-induced short-long-short sequences at the onset of ventricular tachyarrhythmias: a possible mechanism of proarrhythmia? *J Am Coll Cardiol* 2007; 50: 614-22. [CrossRef]
4. Fisher JD. Pacemaker pro-arrhythmia: beyond spike-on-T and endless loop tachycardia. *J Am Coll Cardiol* 2007; 50: 623-5. [CrossRef]
5. Drew BJ, Ackerman MJ, Funk M, Gibler WB, Kligfield P, Menon V, et al. Prevention of torsade de pointes in hospital settings: a scientific statement from the American Heart Association and the American College of Cardiology Foundation. *J Am Coll Cardiol* 2010; 55: 934-47. [CrossRef]
6. Dilaveris P, Vassilopoulos C, Tsagga E, Vavuranakis M, Stefanadis C. Torsades de pointes as a cause of sudden death in a patient with aortic stenosis and atrial fibrillation. *Ann Noninvasive Electrocardiol* 2006; 11: 284-6. [CrossRef]
7. Vos MA, de Groot SH, Verduyn SC, van der Zande J, Leunissen HD, Cleutjens JP, et al. Enhanced susceptibility for acquired torsade de pointes arrhythmias in the dog with chronic, complete AV block is related to cardiac hypertrophy and electrical remodeling. *Circulation* 1998; 98: 1125-35. [CrossRef]
8. Erkapic D, De Rosa S, Kelava A, Lehmann R, Fichtlscherer S, Hohnloser SH. Risk for permanent pacemaker after transcatheter aortic valve implantation: a comprehensive analysis of the literature. *J Cardiovasc Electrophysiol* 2012; 23: 391-7. [CrossRef]
9. Dvir D, Haim M, Kornowski R. Left-ventricular outflow tract ventricular tachycardia event following CoreValve transcatheter aortic-valve implantation. *Catheter Cardiovasc Interv* 2012; 79: 331-3. [CrossRef]
10. Beinart R, Danik S, Palacios I, Barrett C, Inglessis I, Agnihotri A, et al. Ventricular tachycardia following trans-apical aortic valve replacement. *Europace* 2012; 14: 450-2. [CrossRef]

Address for Correspondence: Dr. Samet Yılmaz,
Türkiye Yüksek İhtisas Eğitim ve Araştırma Hastanesi
06100, Ankara-Türkiye
Phone: +90 507 305 58 83
Fax: +90 312 306 10 00
E-mail: sametyilmazmd@gmail.com



©Copyright 2015 by Turkish Society of Cardiology - Available online at www.anatoljcardiol.com
DOI: 10.5152/akd.2015.6120

Elizabethkingia meningosepticum endocarditis: A rare case and special therapy

Jing Yang, Wencheng Xue*, Xiaonan Yu**

Departments Infection Control, *Clinical Laboratory, **Transfusion General Hospital of Shenyang Military Area Command, Shenyang-China

Introduction

Among the *Elizabethkingia* species, *E. meningosepticum* is the most pathogenic member of genus. As primarily opportunistic pathogens, they majorly cause meningitis in premature and newborn infants and rarely cause pneumonia, endocarditis, and meningitis in immunocompromised adults (1). Here we describe an adult patient with an *E. meningosepticum* endocarditis who had no underlying diseases. To the best of our knowledge, this is the first documented case of this type in China.

Case Report

A 66-year-old man was admitted to the emergency department of our hospital with heart failure, respiratory failure, renal failure, and bilateral pleural effusion. He had been admitted in another hospital due to fever and chest pain 2 days before. The patient was referred to our hospital because he had chest distress, shortness of breath, and could not lie on his back. He had no history of hypertension or diabetes. At the time of admission, he had a temperature of 37.2°C, BP of 131/47 mm Hg, pulse of 105 beats/min, and respiratory rate of 36 breaths/min. Hemogram showed WBC count of 18.9×10^9 cells/L with 83% neutrophils. The levels of TNT, blood urea, creatinine, LDH, CysC, ProBNP, and d-dimer were 0.175 ng/mL, 20.17 mmol/L, 159.0 μ mol/L, 378.0 U/L, 2.39 mg/L, 31386.7 pg/mL, and 0.6 μ g/mL, respectively. HIV, HBsAg, and HCV ELISA showed negative results. Echocardiography revealed left ventricular enlargement, decreased cardiac function, aortic valve prolapse, moderate aortic insufficiency, mild to moderate mitral regurgitation, and trace of pericardial effusion. He was administered symptomatic treatment and etapenem due to the probable lower respiratory tract infection.

The blood cultures grew Gram-negative bacilli after 28 of incubation at 37°C on the third day after admission. The Gram-negative rod was nonmotile and catalase- and oxidase-positive. Consequently, it was identified as *E. meningosepticum* using VITEK2 Gram-negative identification card (bioMérieux) because was sensitive to piperacillin-tazobactam, imipenem, meropenem, levofloxacin, minocycline, cefepime, piperacillin, ceoperazone-sulbactam, ticarcillin-clavulanic acid, vancomycin, teicoplanin, and rifampicin and resistant to aztreonam, ceftazidime, gentamicin, and amikacin. Vegetative culture was also positive for *E. meningosepticum*. It had the same resistance phenotype with that organism isolated from blood. The sputum culture showed normal flora.

The patient was treated on the lines of acute bacterial endocarditis with injections of Vancomycin 1 g/12 h intravenously initially; the dose was reduced to 0.5 g/week later as the patient became afebrile and his subsequent blood cultures were sterile. Aortic valve replacement and intracardiac aortic sinus aneurysm repair surgery was then performed. However, 11 days later he developed *Acinetobacter baumannii* septicemia and cardiac arrest and died despite resuscitative measures.

Discussion

Staphylococci and streptococci are the main pathogens and Gram-negative bacilli are rare to cause infective endocarditis (2, 3). *E. meningosepticum* is a nonfermenting, nonmotile, Gram-negative aerobic rod and is not considered part of the normal human flora. It is a well-known pathogen causing meningitis in premature and newborn infants. Strains of this bacterium have infrequently been reported to cause infection among adults. In adults it can cause endocarditis, pneumonia, bacteremia, and keratitis (1, 4, 5). In the hospital environment, they exist in water systems and wet surfaces and serve as potential reservoirs of infection. Saline, lipid, and chlorhexidine gluconate solutions as well as contaminated sinks have been implicated as sources of infection (6). Contaminated surgically implanted devices, such as intravascular catheters and prosthetic valves, have also been reported to carry the bacteria (7).

The organism has a peculiar antibiotic profile and is usually resistant to most antibiotics commonly prescribed to treat Gram-negative bacteria (Aminoglycosides, beta-lactam agents, chloramphenicol, and carbapenems) but susceptible to agents used to treat Gram-positive bacteria (rifampicin, ciprofloxacin, vancomycin, and trimethoprim-sulfamethoxazole). Hence, selecting the appropriate antibiotic for the treatment is difficult. Some fluoroquinolones have shown favorable results (1, 8). Rifampicin is usually active *in vitro* and has been used as a part of combination therapy to clear persistent infections. Although vancomycin was used earlier to treat the patients, there are reports showing that vancomycin would not be effective against this organism (9). Thus, there is no optimal regimen for the treatment of *Elizabethkingia* spp. infections. More studies are required for the evaluation of these drugs. The doctor treated the patient with vancomycin and the patient responded well to vancomycin. His temperature turned normal and blood culture became negative. However, he died of *A. baumannii* bacteremia; this can be the limitation of the study for strongly proving vancomycin as good alternative to treat *E. meningosepticum* endocarditis.

Conclusion

E. meningosepticum could be a rare pathogen in endocarditis patients. Selecting the appropriate antibiotic is crucial for its treatment and vancomycin may be a good choice.

References

- Boroda K, Li L. *Elizabethkingia meningosepticum* in a patient with six-year bilateral perma-catheters. *Case Rep Infect Dis* 2014; 2014: 985306.
- Bor DH, Woolhandler S, Nardin R, Bruschi J, Himmelstein DU. Infective endocarditis in the U.S., 1998-2009: a nationwide study. *PLoS One* 2013; 8: e60033. [CrossRef]
- Mahmood S, Taylor KE, Overman TL, McCormick MI. Acute infective endocarditis caused by *Delftia acidovorans*, a rare pathogen complicating intravenous drug use. *J Clin Microbiol* 2012; 50: 3799-800. [CrossRef]
- Ghafari A, Vidyakshmi PR, Priyadarshini K, Easow JM, Raj R, Raja T. *Elizabethkingia meningoseptica* bacteremia in immunocompromised hosts: The first case series from India. *South Asian J Cancer* 2013; 2: 211-5. [CrossRef]
- Erdem E, Abdurrahmanoğlu S, Kibar F, Yağmur M, Köksal F, Ersöz R. Posttraumatic keratitis caused by *Elizabethkingia meningosepticum*. *Eye Contact Lens* 2013; 39: 361-3. [CrossRef]
- Jean SS, Lee WS, Chen FL, Ou TY, Hsueh PR. *Elizabethkingia meningoseptica*: an important emerging pathogen causing healthcare-associated infections. *J Hosp Infect* 2014; 86: 244-9. [CrossRef]
- Nulens E, Bussels B, Bols A, Gordts B, van Landuyt HW. Recurrent bacteremia by *Chryseobacterium indologenes* in an oncology patient with a totally implanted intravascular device. *Clin Microbiol Infect* 2001; 7: 391-3. [CrossRef]
- Kirby JT, Sader HS, Walsh TR, Jones RN. Antimicrobial susceptibility and epidemiology of a worldwide collection of *Chryseobacterium* spp: report from the SENTRY Antimicrobial Surveillance Program (1997-2001). *J Clin Microbiol* 2004; 42: 445-8. [CrossRef]
- Chou DW, Wu SL, Lee CT, Tai FT, Yu WL. Clinical characteristics, antimicrobial susceptibilities, and outcomes of patients with *Chryseobacterium indologenes* bacteremia in an intensive care unit. *Jpn J Infect Dis* 2011; 64: 520-4.

Address for Correspondence: Xiaonan Yu,
Department of Transfusion, General Hospital of
Shenyang Military Area Command,
Shenyang 110840-PR. China
E-mail: 13309884078@189.cn

©Copyright 2015 by Turkish Society of Cardiology - Available online at www.anatoljcardiol.com
DOI:10.5152/akd.2015.6014



New technique for challenging cases of percutaneous balloon mitral valvuloplasty: The venoarterial looping

İsmail Ateş, Şeref Ulucan¹, Zeynettin Kaya¹, Mehmet Doğru², Hüseyin Katlandur¹, Ahmet Keser¹
Clinic of Cardiology, Sema Hospital; Almaty-Kazakhstan
¹Department of Cardiology, Faculty of Medicine, Mevlana University; Konya-Turkey
²Clinic of Cardiology, Medline Hospital; Antalya-Turkey

Introduction

Mitral stenosis (MS) is generally the sequel of rheumatic carditis occurring in childhood (1). MS is particularly observed in developing countries (1, 2). Untreated patients can develop irreversible right ventricular failure (1, 2). Since its introduction by Inoue, percutaneous mitral balloon valvuloplasty (PMBV) is considered the leading and effective treatment option for symptomatic moderate to severe MS with favorable valve morphology (3, 4). PMBV provides immediate and sustained hemodynamic improvement, comparable with the results of surgery (3). However, there are challenges in some cases of PMBV, where surgery is also not feasible. Various techniques have been described for directing the mitral balloon catheter to left ventricle during PMBV (5-9). Here we aim to define a new technique for challenging cases of PMBV in patients with a large left atrium and a severe MS called the venoarterial looping.

Case Report

A 67-year-old man was transferred to an intensive care unit from emergency service after intubation due to acute respiratory failure. The patient showed significant rheumatic MS (mitral valve area 0.6 cm²) and systolic heart failure (the left ventricular ejection fraction was 30%) associated with wide QRS complex (left bundle branch block; QRS duration >150 ms), and atrial fibrillation with rapid ventricular response