Endocarditis and Bacteremia due to Kocuria rosea Following Heart Valve Replacement

Aslı Kiraz[1], Süleyman Durmaz[2], Ali Baykan[3], Duygu Perçin[4]

[1]Onsekiz Mart University Faculty of Medicine, Department of Medical Microbiology, Çanakkale, Turkey.

[2]Mevlana University Faculty of Medicine, Department of Medical Microbiology, Konya, Turkey

[3]Erciyes University Faculty of Medicine, Department of Paediatric Cardiology, Kayseri, Turkey.

[4]Erciyes University Faculty of Medicine, Department of Medical Microbiology, Kayseri, Turkey.

Eur J Basic Med Sci 2013;3(4): 93-95

Received: 28-02-2014

Accepted: 19-03-2014

Correspondence (Yazışma Adresi):
Süleyman DURMAZ, MD
Mevlana University Faculty of Medicine, Department of Medical Microbiology, Konya, Turkey
Phone Number: +90 444 4243 (1028)
e-mail: sdurmaz@mevlana.edu.tr

ABSTRACT

Kocuria rosea, the member of the family Micrococcaceae, is usually seen as normal flora of skin and mucous membranes, but can cause serious infections in immunocompromised patients. In this case, 10 days after the application of mitral valve replacement because of mitral insufficiency, subfebrile fever and echocardiographic vegetations were found and Kocuria rosea was isolated from the peripheral blood culture sample. The patient was afebrile and his general condition improved and discharged after treatment with ceftriaxone 2x700 mg and gentamicin 2x70 mg. Although this bacteria is usually considered to be as contamination when grew in culture, it may cause infection in immunocompromised patients. Due to these factors, communication between the laboratory and the clinic is very important to discriminate these cases.

Key words: *Endocarditis, Kocuria rosea, Bacteremia, Heart valve replacement*

Kalp Kapak Replasmanı Sonrası Kocuria rosea Etken Olduğu Endokardit ve Bakteriyemi

ÖZET

Micrococcaceae ailesinde yer alan bir bakteri olan Kocuria rosea, genellikle cilt ve mukozalarda normal flora üyesi olarak bulunmakta ancak herhangi bir nedenle immün sistemi baskılanmış hastalarda ciddi enfeksiyonlara neden olabilmektedir. Bu olguda 10 gün önce mitral yetmezlik nedeniyle mitral kapak replasmanı uygulandıktan sonra subfebril ateş ve ekokardiyografide vejetasyonlar saptanmış olup, alınan periferik kan kültürü örneğinden Kocuria rosea izole edildi. Tedavi olarak 2x700 mg seftriakson ve 2x70 mg gentamisin başlanan hastanın klinik takibinde ateşi olmayan ve genel durumu düzelen hasta tedavinin ardından taburcu edildi. Genellikle kültürde üretildiklerinde kontaminasyon olarak değerlendirilen bu bakteriler immünkompromize hastalarda etken olabileceğinden laboratuvar-klinik arasındaki bağlantı önem arzetmektedir.

Anahtar kelimeler: *Endokardit, Kocuria rosea, Bakteriyemi, Kalp kapak replasmanı*

INTRODUCTION

Kocuria rosea, the member of the family Micrococcaceae is catalase positive, coagulase negative, non-hemolytic gram positive cocci (1). It is furazolidone resistant and sensitive to bacitracin and is seperated by these properties from staphylococci (2). Kocuria infections are rarely seen and are often found in immunosuppressive patients who have underlying metabolic, hematologic or malignant diseases. These infections are seen such as brain abscess, meningitis, pneumonia, endocarditis, ventricular shunt infections and peritonitis in patients undergoing continuous ambulatory peritoneal dialysis (1,2). This is a case report of a patient with the diagnosis of infective endocarditis following mitral valve replacement. K. rosea was isolated from blood culture.

CASE REPORT

The patient was a nine-year-old male, with the diagnosis of ventricular septal defect (VSD) and transposition of great arteries (TGA) since 2002. Angiography was performed four times during follow-up. The patient underwent for VSD closure operation in 2005. He underwent mitral valve replacement in another hospital because of mitral regurgitation and arrived for control at Erciyes University Medical Faculty Hospital after 10 days later. During postoperative follow-up, he had subfebrile fever intervals up to 37,5 ºC and intervals of abdominal pain. In all focuses 5/6 degree murmur and tril was heard in the physical examination of the heart. Patient's peripheral white blood cell count was 11.080/ mm3 (64% partial, 19% lymphocytes, monocytes 7%). Four sets of peripheral blood cultures were taken and echocardiography was performed. Vegetations were seen in echocardiography and infective endocarditis was suspected. All of four peripheral blood culture samples were sent to the Bacteriology Laboratory of Erciyes University Faculty of Medicine and incubation was held in BacTec9240 blood culture system (BectonDickinson, USA). One of the bottles gave positive signal on the third day of incubation and clusters of gram-positive cocci were seen. Non-hemolytic, yellow-pigmented colonies were seen on 5% sheep blood agar after overnight incubation of subcultures. The bacteria was identified as K. rosea using API ID 32 STAPH (bioMerieux, USA). This bacterium was confirmed as an infectious agent after correspondence with the clinician. Bacterial growth was not detected in other three blood culture samples. Antibiotic susceptibility test was performed by using disc diffusion method on Mueller-Hinton agar according to the CLSI (Clinical and Laboratory Standards Institute) recommendations (3). Bacteria was found to be sensitive to vancomycin, teicoplanin, trimethoprim-sulfamethoxazole, erythromycin, clindamycin, gentamicin, ciprofloxacin and methicillin. Treatment with ceftriaxone 2x700 mg and 2x70 mg of gentamicin was given to the patient. During the clinical follow-up, the general condition improved after treatment and no fever was seen and then the patient was discharged.

DISCUSSION

K.rosea is one of the total of 17 bacterial species belonging to the family Micrococcaceae (1). It is a commensal bacterium of the oropharynx, skin and mucosa in humans and it is debatable when isolated in culture whether cause of infection or not (4). However, it may rarely be an opportunistic pathogen in immunosuppressive patients (5-7). In this case, despite the detection of bacterial growth in one of four peripheral blood cultures, subfebrile fever and vegetations seen by echocardiography suggested infective endocarditis after mitral valve replacement, the presence of left modified Blalock-Taussig shunt (BT shunt), absence of different bacteria in blood cultures and clinical improvement with treatment supported to endocarditis due to K. rosea. In general, because of infections due to bacteria belong to Kocuria genus were seen rarely, identified incorrectly and/or considered as a contaminant there has been a very limited literature on this subject. The first case in our country was reported by Altuntas et al. as a bacteremia due to K. rosea (4,8). The case presented here is the first case of endocarditis due to K.rosea following heart valve replacament known in the literatüre according to the PubMed search results. It is known that Micrococcaceae have affinity to plastic materials and can cause bacteremia via infected materials so that they can be a reason of mortality and morbidity in immunosuppressive patients (9). In our case, endocarditis might have developed as the basis of pre-existing shunt.

In conclusion, bacteria belong to Kocuria genus and their infections, is still a field that waiting for clarification of

microbiology. Although these bacteria are believed to have caused infections rarely, their isolation in culture should considered with caution and should not be ignored. When micrococci isolated from blood cultures of immunosuppressive patients, interpretation together with the clinician is the most accurate way of diagnosis.

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