

中文題目：罕見 *Klebsiella Oxytoca* 感染性心內膜炎：病例報告

英文題目：A rare infective endocarditis caused by *Klebsiella Oxytoca*: A Case Report

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摘要

一位 71 歲女性患者因持續性的高燒及全身無力約 10 天的時間至本院求診。根據連續四套結果為陽性之血液培養及透過胸前及經食道超音波證實位於僧帽瓣前葉之贅生物(大小約為 0.6 X 1.3 公分)，我們將其診斷為 *Klebsiella oxytoca* 心內膜炎。以靜脈注射第一代抗生素 cefazolin 治療四週的時間，患者完全康復出院。

A rare infective endocarditis caused by *Klebsiella Oxytoca*: A Case Report

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Conflicts of interest: none

Running title: Community-acquired *Klebsiella oxytoca* endocarditis

Key words: *Infective endocarditis; Klebsiella oxytoca*

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Abstract

We report the case of a 71-year-old woman who presented with persistent high fever and progressive weakness for 10 days. *Klebsiella oxytoca* infective endocarditis was diagnosed based on four sets of positive blood culture of *Klebsiella oxytoca* together with fluttering vegetation (0.6 cm in diameter × 1.3 cm long) on the base of the anterior mitral leaflet. The diagnosis was documented using transthoracic and transesophageal echocardiograms. After 4 weeks of intravenous cefazolin therapy, the patient completely recovered.

INTRODUCTION

Klebsiella species are rare causal microorganisms that may account for 1.2% of native valve endocarditis,[1-7] among which, *Klebsiella oxytoca* endocarditis is extremely rare. There has been only one such case reported: in 1985, *Klebsiella oxytoca* endocarditis occurred after transurethral resection of a patient's prostate gland.[1] Here we report the first case of community-acquired *Klebsiella oxytoca* endocarditis.

CASE REPORT

A 71-year-old woman presented with persistent fever and generalized weakness for 10 days. She also had deteriorating shortness of breath. She had not traveled abroad. Her past medical history included diabetes mellitus, hypertension, and mild chronic renal insufficiency, all which had been regularly treated. When the patient arrived at the emergency room, her body temperature was 39.4°C and blood pressure was 178/78 mmHg. Her respiratory rate was 18 per minute, her conjunctiva appeared slightly pale, and her jugular veins were not engorged. She had a grade 2/6 diastolic murmur at the left upper sternal border and a grade 2/6 pansystolic murmur at the apex. Chest auscultation showed some crackles in both lower lung fields. Her liver and spleen were not palpable. She had no conjunctival hemorrhage, Janeway's lesion, Osler node, or splinter hemorrhage. Her eye-ground checkup showed no Roth's spots.

Hemograms showed hemoglobin at 9.42 gm/dl, white blood cells at 14,000/cmm with 95% segmented forms, monocytes at 3%, and lymphocytes at 2%; platelets at 309,000/cmm. A blood biochemistry showed serum creatinine at 2.7 mg/dl, blood urea nitrogen at 41 mg/dl, serum sodium concentration at 147 mmol/l, serum potassium level at 3.5 mmol/l, serum C-reactive protein at 64 mg/l, AST at 25 mg/dl, and ALT at 26 mg/dl. Her urinalysis was normal. A chest X-ray showed mild pulmonary congestion and cardiomegaly. Twelve-lead electrocardiograms revealed a normal sinus rhythm and left ventricular hypertrophy with secondary ST-T changes. Arterial blood gas showed a pH of 7.395, paO_2 at 95 mm Hg, paCO_2 at 36 mm Hg, and HCO_3^- at 22 mEq/l. The patient also had mild mitral regurgitation, aortic regurgitation, and concentric left ventricular hypertrophy. The cardiac chambers were not dilated, and the left ventricular systolic function was normal. Transesophageal echocardiograms clearly revealed fluttering vegetation (0.6 cm in diameter \times 1.3 cm long) with a fine connection to the mitral valve on the ventricular side of the anterior mitral leaflet base (Fig. 1). Ultrasonograms of the liver and kidneys were unrevealing. Four sets of blood cultures showed *Klebsiella oxytoca*, which is susceptible to cefazolin, amikacin, ceftriaxone, cefuroxime, levofloxacin, and imipenem, but resistant to gentamicin, sulfamethoxazole, and trimethoprim according to a standard disk susceptibility test. The patient's urine culture was negative.

The patient was given 1 gram of intravenous cefazolin every 8 hours for 4 weeks. Her

fever subsided 4 days after antibiotic treatment began. Blood cultures repeated after 4 weeks of antibiotic treatment were negative. The patient was in good condition at her 4-month follow-up visit, when echocardiograms showed negligible residual vegetation.

DISCUSSION

This is the first case report of community-acquired *Klebsiella oxytoca* endocarditis. The diagnosis was based on one major (oscillating intracardiac mass on the mitral valve) and three minor (predisposing cardiac mitral and aortic valvular regurgitation, fever $\geq 38^{\circ}\text{C}$, and positive blood cultures) modified Duke criteria for infective endocarditis.[8] This is also the first reported case of *Klebsiella oxytoca* endocarditis that completely meets the modified Duke criteria.

Klebsiella species, the same as other Gram-negative bacteria, are an uncommon but ominous cause of bacterial endocarditis.[9] *Klebsiella* endocarditis accounts for 1.2% of native valve endocarditis and 4.1% of prosthetic valve endocarditis.[9] *Klebsiella oxytoca* endocarditis, however, is less often encountered. The mortality of *Klebsiella* endocarditis is higher than for other Gram-negative endocarditis.[9,10,11] Similar to other Gram-negative bacterial endocarditis, aggressive antibiotic therapy is necessary to treat *Klebsiella* endocarditis. Third-generation cephalosporin and aminoglycosides are often used in combination,[9]and a 6-week treatment course seems prudent for *Klebsiella* endocarditis. In

the present case of *Klebsiella oxytoca* endocarditis, however, 4 weeks of cefazolin treatment eliminated the pathogen. This is quite different from reported experience with other types of *Klebsiella* endocarditis.

The portals of entry for *Klebsiella oxytoca* bacteremia include, in decreasing order of frequency, the hepatobiliary tract (58-65%), an intravascular or urinary catheter (7-12%), the urinary tract (5%), the skin and soft tissues (5%), and the peritoneal cavity (2%).[5,7] We were not able to specify the portal of entry in the present case.

SUMMARY

This was a rare case of *Klebsiella oxytoca* endocarditis diagnosed using modified Duke criteria. The patient was given 4 weeks of cefazolin treatment and recovered completely.

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Figure Legend

Fig. 1. Transesophageal echocardiography revealed fluttering vegetation originating from the base of the anterior mitral leaflet (white arrow).

