

CONCISE COMMUNICATIONS

Endocarditis due to *Neisseria mucosa* after tongue piercingH. Tronel¹, H. Chaudemanche², N. Pechier³, L. Doutrelant³ and B. Hoen^{4,*}

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Non-gonococcal non-meningococcal *Neisseria* sp. are normal inhabitants of the upper respiratory tract in human beings. Although these bacteria are regarded as having low pathogenicity, *Neisseria mucosa* has been reported to cause serious infections such as endocarditis [1–5]. We report a case of infective endocarditis due to *N. mucosa* that probably resulted from tongue piercing.

A 20-year-old woman was admitted to the emergency room with a 2-week history of fatigue, myalgia, arthralgia and intermittent fever. She had no medical history but, 1 month prior to admission, she underwent tongue piercing with the insertion of two metal barbells transfixing her tongue. Three days before admission, she removed one of them because of persistent pain and significant swelling of the tongue. Physical examination revealed a persisting wound of the tongue at the place where the barbell was previously inserted. Laboratory data showed elevated white blood cell count ($22 \times 10^9/L$) and C-reactive protein (88 mg/L). She was offered in-patient care but refused it. She was readmitted 1 week later with high-grade fever (temperature 39 °C) and purpuric lesions in her fingers. Her arterial blood pressure was 130/70 mmHg and heart rate was 110/min. Heart and lung examination were normal. She was admitted to the Cardiology Department with a presumptive diagnosis of infective endocarditis. Laboratory findings were as follows: white blood cell count, $10 \times 10^9/L$; erythrocyte sedimentation rate, 88 mm/h; and C-reactive protein, 85 mg/L. Within 24 h the first three blood cultures were positive with Gram-negative diplococci identified as *N. mucosa* using the NEISSERIA 4H test (Sanofi Diagnostics Pasteur, Marnes-la-Coquette, France). This identification was subsequently confirmed by the Centre National de Référence des méningocoques et *Neisseria* apparentées, Institut Pasteur, Paris, France. The organism was susceptible to amoxicillin, cefotaxime, ceftriaxone and ciprofloxacin, but showed intermediate susceptibility to penicillin G (MIC 0.38 mg/L). The test for β -lactamase production was negative. By the time the results of blood cultures became available, the patient had escaped from hospital. She returned 48 h later with persistent high-grade fever and the systolic ejection murmur of mitral

regurgitation. Transthoracic echocardiography disclosed grade II mitral incompetence. Two more blood cultures were drawn and were also positive for *N. mucosa*. Intravenous antibiotics were started with ceftriaxone 1 g twice daily and ciprofloxacin 200 mg twice daily. The next day, transesophageal echocardiography revealed a large vegetation on the anterior leaflet of the mitral valve. During the procedure the metal barbell of the tongue was removed for culture and the patient's tongue and throat were also swabbed for culture. None of these samples, obtained after antibiotic therapy was started, grew *Neisseria*.

On the third day of treatment, the patient became afebrile. A transesophageal echocardiogram performed on the 9th hospital day still showed the large vegetation previously observed on the anterior leaflet of the mitral valve. The patient remained afebrile during her subsequent hospital course, and eight blood cultures drawn between the 3rd and 21st day of treatment remained negative.

Antibiotic therapy was discontinued after 28 days of treatment and the patient was discharged 4 days later. At that time, the patient remained afebrile, the erythrocyte sedimentation rate and C-reactive protein had fallen to 13 mm/h and 3 mg/L, respectively. A new transesophageal echocardiogram showed a twofold reduction of the vegetation size, with stable grade II mitral regurgitation. Two months later, the patient had experienced no relapse and was doing well.

The case we report here fulfills the Duke criteria for clinically definite endocarditis [6], and is the first report of *N. mucosa* infective endocarditis associated with tongue piercing. Although cultures of the removed barbell and patient's tongue and throat failed to yield *N. mucosa*, we believe that the wound of the tongue was the most likely source for *N. mucosa*. *N. mucosa* is an extremely rare cause of endocarditis. Our search of the literature led us to identify only 19 cases of endocarditis caused by *N. mucosa*. Among these, eight cases had no prior valvular or congenital heart disease [1,2,4,5]. The mitral valve was the most frequently involved valve [1,2,4,5].

Since *N. mucosa* may have varying susceptibility to penicillin [2], fluoroquinolones such as ciprofloxacin have been used [3].

Body piercing, even when intraoral sites are involved, is generally not regarded as a risk factor for endocarditis. However, tongue piercing has been reported to cause significant local infectious complications [7]. In addition, other sites of body piercing have been associated with various infectious complications [8], including rare cases of endocarditis, as illustrated by two cases that occurred in teenagers, one caused by *Staphylococcus aureus* after nasal piercing [9], and the other caused by *Streptococcus mitis* after ear piercing [10].

With the growing fashion of body piercing, clinicians should be prepared to take care of patients with infectious – sometimes serious – complications, resulting from these procedures and devices.

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