Authors' laboratories were supported by the National Key Project on Science and Technology of China (No.2003BA-712A03-07) and DPCKSCU (IRT0447).

Xiao-Guang Chen,* Hua Li,* and Zhao-Rong Lun†

*Southern Medical University, Guangzhou, People's Republic of China; and †Zhongshan (Sun Yat-Sen) University, Guangzhou, People's Republic of China

References

1. He JZ, Zhu SH, Yang SQ. First discovery and evidence of *Angiostrongylus cantonensis* in the cerebrospinal fluid from the case of population of mainland of China. J Guangzhou Med Coll. 1984;12:1–4.
2. Xue DY, Ruan YZ, Lin BC. Epidemiological investigation on an outbreak of angiostrongyliasis in Wenzhou. Chin J Parasit Dis. 2000;18:176–8.
3. Lin JX, Li YS, Zhu K. Epidemiological study on group infection of *Angiostrongylus cantonensis* in Changle City. Chin J Parasitol Parasit Dis. 2003;21:110–2.
4. Liang HK, Shen HX, Xu BK. Investigation on the definite, intermediate and paratenic hosts of *Angiostrongylus cantonensis* in Guangzhou. Chin J Epidemiol. 1984;5:245–8.
5. Huang XQ, Zhong QC, He JZ. Investigation of *Angiostrongylus cantonensis* infection in rat with IEST method. Journal of Guangdong Medical and Drug College. 1993;9:22–3.
6. Li H, Chen XG, Shen HX. Analysis on the antigens of *Angiostrongylus cantonensis* and screen of the dominant diagnostic antigen. Chin J Parasitol Parasit Dis. 2005;23:33–9.
7. Slom TJ, Cortese MM, Gerber SI. An outbreak of eosinophilic meningitis caused by *Angiostrongylus cantonesis* in travelers returning from the Caribbean. N Engl J Med. 2002;346:668–75.
8. Wang XT, Huang HJ, Dong QQ. A clinical research for eosinophilic meningoencephalitis caused by angiostrongyliasis. Chin J Intern Med. 1999;38:326–8.

Address for correspondence: Xiao-Guang Chen, Department of Parasitology, Institute of Tropical Medicine, Southern Medical University, Guangzhou 510515, People's Republic of China; fax: 86-20-6164-8308; email: xgchen@fimmu.com

Methicillin-resistant *Staphylococcus aureus* Necrotizing Pneumonia

To the Editor: Methicillin-resistant *Staphylococcus aureus* (MRSA) strains account for >40% of all hospital-acquired *S. aureus* infections in Italy (1). Although cases of community-acquired MRSA (CA-MRSA) infections have been reported in recent years (2), these isolates have not been characterized for Panton-Valentine leukocidin (PVL) (3); therefore, the presence of isolates with the typical characteristics of CA-MRSA (4) in Italy remains unknown.

At the beginning of April 2005, a 37-year-old woman was admitted to the University Hospital Policlinico in Rome because of fever, cough, and headache. Her medical history was unremarkable. She was a teacher in a school for foreign students in Rome, smoked 3 cigarettes per day for 15 years, and reported no recent travel abroad. Her 5-year-old daughter had influenzalike symptoms in the previous week. At hospital admission, her temperature was 39°C, heart rate was 108 beats/min, respiratory rate was 32 breaths/min, and blood pressure was 105/70 mmHg. Arterial blood gas analysis showed mild hypoxemia and hypocapnia (PaO_2 73 mm Hg and $PaCO_2$ 34 mm Hg on room air). Leukocyte count was 24,360 cells/μL (81% polymorphonuclear cells), and platelet count was 506,000/μL. Chest radiograph showed infiltrates in the right upper and lower lobes and left lower lobe. Empiric treatment with clarithromycin and ceftriaxone was started, but the patient's clinical conditions did not improve. Culture of sputum samples obtained at admission yielded growth of MRSA. Computed tomographic scan showed multiple lung cavitary lesions, indicating necrotizing pneumonia. On day 3 of admission, antimicrobial drug therapy was changed to linezolid (600 mg 3 times a day). Fever resolved, and the patient's condition rapidly improved. The patient was discharged after 14 days of linezolid treatment. At discharge, leukocyte count was 6,040 cell/μL (58% polymorphonuclear cells), and arterial blood gas analysis showed PaO_2 of 88 mm Hg.

The MRSA isolate from sputum was susceptible to all the non–β-lactam antimicrobial drugs tested, including erythromycin, clindamycin, ciprofloxacin, tetracycline, kanamycin, and fusidic acid. With established molecular methods, the isolate was found to harbor *SCCmec* type IV (5); *lukS* and *lukF*, the genes coding for the 2 subunits of the PVL toxin; and *hlg*, the γ-hemolysin gene (3). The genetic background of the isolate was determined by multilocus sequence typing (MLST) (6) and sequence typing of the tandem repeat region of protein A gene (*spa* typing) (7). Results showed that the isolate belonged to ST30 according to the MLST database (http://saureus.mlst.net), and *spa* typing, analyzed by the Ridom Staphtype software (http://www.ridom.de), indicated a novel *spa* type, to which type 755 was assigned. ST30, 1 of 6 clones more commonly associated with PVL-positive CA-MRSA (4), is designated also the southwest Pacific (SWP) clone, because of the area in which it circulates. Recently, the SWP clone has caused CA-MRSA infections in northern European countries (England, Scotland, the Netherlands, Sweden, and Latvia) (8,9). Molecular analysis suggests that the SWP clone has evolved from a methicillin-susceptible clone of *S. aureus*, termed phage type 80/81, that was pandemic in the 1950s and considered to be unusually virulent and transmissible (8). In fact, strains belonging to phage type 80/81 carry the PVL gene and

appear to have subsequently acquired methicillin resistance through horizontal transfer of *SCCmec* type IV. The *spa* type of the Italian isolate comprises 7 nucleotide repeats, indicated by XJ4AKAOM in the alphabetical code. This repeat sequence differs from that of the classical SWP clone, indicated by XKAKAOMQ (8), by only 1 bp in the second repeat and loss of the last Q repeat. In spite of these differences, the *spa* type is in substantial agreement with the MLST result and indicates that the Italian isolate is either a descendent or a local variant of the SWP clone. The most common clone of CA-MRSA described in Europe is ST80, *spa* type 44. CA-MRSA belonging to ST80 tend to be more antimicrobial drug resistant than isolates belonging to other clones (4). Resistance to fusidic acid, typical of ST80, has been proposed as a marker for CA-MRSA in Europe (10). In light of our finding, we cannot rely on resistance to fusidic acid to screen for PVL-producing CA-MRSA in our country.

To our knowledge, this is the first report from Italy of necrotizing pneumonia caused by PVL-positive CA-MRSA. The presentation was typically that of a severe pneumonia that occurred in a previously healthy, young adult with no risk factors for MRSA acquisition, as described in other cases (11). This is also the first report of a SWP clone isolate in southern Europe; if the strain is circulating in Italy or is occasionally imported from the SWP area, whether our patient acquired it through contact with a foreign contact remains unknown.

Monica Monaco,*
Rosa Antonucci,† Paolo Palange,†
Mario Venditti,†
and Annalisa Pantosti*

*Istituto Superiore di Sanità, Rome, Italy; and †Università La Sapienza, Rome, Italy

References

1. European Antimicrobial Resistance Surveillance System. EARSS Annual Report 2003. [cited 2005 Aug 16]. Available from http://www.earss.rivm.nl
2. Pistella E, Campanile F, Bongiorno D, Stefani S, Di Nucci GD, Serra P, et al. Successful treatment of disseminated cerebritis complicating methicillin-resistant *Staphylococcus aureus* endocarditis unresponsive to vancomycin therapy with linezolid. Scand J Infect Dis. 2004;36:222–5.
3. Lina G, Piemont Y, Godail-Gamot F, Bes M, Peter MO, Gauduchon V, et al. Involvement of Panton-Valentine leukocidin-producing *Staphylococcus aureus* in primary skin infections and pneumonia. Clin Infect Dis. 1999;29:1128–32.
4. Vandenesch F, Naimi T, Enright MC, Lina G, Nimmo GR, Heffernan H, et al. Community-acquired methicillin-resistant *Staphylococcus aureus* carrying the Panton-Valentine leukocidin genes: worldwide emergence. Emerg Infect Dis. 2003;9:978–84.
5. Oliveira DC, de Lencastre H. Multiplex PCR strategy for rapid identification of structural types and variants of the mec element in methicillin-resistant *Staphylococcus aureus*. Antimicrob Agents Chemother. 2002;46:2155–61.
6. Enright MC, Day NPJ, Davies CE, Peacock SJ, Spratt BG. Multilocus sequence typing for characterization of methicillin-resistant and methicillin-susceptible clones of *Staphylococcus aureus*. J Clin Microbiol. 2000;38:1008–15.
7. Harmsen D, Claus H, Witte W, Rothganger J, Claus H, Turnwald D, et al. Typing of methicillin-resistant *Staphylococcus aureus* in a university hospital setting by using novel software for *spa* repeat determination and database management. J Clin Microbiol. 2003;41:5442–8.
8. Robinson DA, Kearns AM, Holmes A, Morrison D, Grundmann H, Edwards G, et al. Re-emergence of early pandemic *Staphylococcus aureus* as a community-acquired methicillin-resistant clone. Lancet. 2005;365:1256–8.
9. Vandenesch F, Etienne J. How to prevent the transmission of MRSA in the open community? Euro Surveill [serial on the Internet]. 2004 Nov [cited 2005 Aug 10]. Available from http://www.eurosurveillance.org/ em/v09n11/0911-221.asp
10. Witte W, Braulke C, Cuny C, Strommenger B, Werner G, Heuck D, et al. Emergence of methicillin-resistant *Staphylococcus aureus* with Panton-Valentine leukocidin genes in central Europe. Eur J Clin Microbiol Infect Dis. 2005;24:1–5.
11. Francis JS, Doherty MC, Lopatin U, Johnston CP, Sinha G, Ross T, et al. Severe community-onset pneumonia in healthy adults caused by methicillin-resistant *Staphylococcus aureus* carrying the Panton-Valentine leukocidin genes. Clin Infect Dis. 2005;40:100–7.

Address for correspondence: Annalisa Pantosti, Dipartimento di Malattie Infettive, Parassitarie ed Immunomediate, Istituto Superiore di Sanità, Viale Regina Elena 299, 00161 Rome, Italy; fax: 39-06-4938-7112; email: pantosti@iss.it

West Nile Virus Infection and Conjunctival Exposure

To the Editor: Corvids (crows, blue jays, magpies, and their relatives) are particularly susceptible to West Nile virus (WNV) (1). Birds are useful indicators of the spread of WNV (1), and Canada has implemented WNV surveillance strategies that use these species as sentinels.

Direct acquisition of WNV through percutaneous injuries has been reported in 2 laboratory circumstances, involving a blue jay and a mouse (2). We describe a conjunctival exposure to WNV that occurred in the field and probably resulted in infection in the exposed person.

As part of the local WNV bird surveillance activities in 2003, an animal control officer collected sick and dead corvids at the Canadian Forces Base, Suffield, Alberta. He had a protective suit on, but he wore no mask or face shield. While killing an injured crow (*Corvus brachyrhynchos*), the officer struck the struggling bird on a nearby horizontal pipe gate, which resulted in fracture of the skull, causing brain tis-