The eosinophilic pleural and pulmonary response may be elicited by the larvae of helminths carried hematogenously into lungs and pleura in an aberrant fashion (3). The last point we stress is that, as shown by Moore et al. (1), patients returning from disease-endemic areas, mainly Southeast Asia and Central and South America, should be tested systematically for gnathostomiasis. Although some patients show a typical cutaneous form of gnathostomiasis associated with eosinophilia (6,7), most atypical forms are probably underdiagnosed, and severe neurologic involvement may occur if treatment is not given (1). However, until recently specific serologic tests for gnathostomiasis were available only in Asia, mainly in Thailand and Japan. Some laboratories in Europe currently provide testing for gnathostomiasis, which would be a valuable aid in evaluating patients returning from the tropics.

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Methicillin-resistant *Staphylococcus aureus*, Pakistan, 1996–2003

To the Editor: This letter is written in response to the article titled "Co-trimoxazole-sensitive, methicillin-resistant *Staphylococcus aureus*, Israel, 1988–1997" (1). We found the authors' findings most interesting. As the authors pointed out, methicillin-resistant *Staphylococcus aureus* (MRSA) infections have become a major problem worldwide. The problem is not restricted to industrialized countries. The last decade has seen an alarming increase in MRSA infections in Pakistani hospitals (2). Pakistan's Armed Forces Institute of Pathology provides laboratory services to a 1,500-bed tertiary-care hospital in Rawalpindi and is the main reference laboratory in northern Pakistan. According to our computerized database, the frequency of MRSA among all nosocomial isolates of *S. aureus* increased from 39% (212/543) in 1996 to 51% (516/1,018) in 2003 ($p < 0.0001$). Most of the isolates were obtained from pus and pus swab specimens (153 in 1996 and 394 in 2003), while the rest were obtained from blood (20 in 1996 and 37 in 2003), intravenous catheter tips and surgical drainage tubes (14 in 1996 and 31 in 2003), various body fluids (9 in 1996 and 19 in 2003), respiratory secretions (8 in 1996 and 18 in 2003), tissue (4 in 1996, 9 in 2003), throat swabs (2 in 1996, 6 in 2003), and urine (2 in 1996, 5 in 2003).

During the last 7 years, resistance in MRSA isolates has steadily increased to most of the antimicrobial drugs such as gentamicin (69% in 1996 and 88% in 2003), ciprofloxacin (87% in 1996 and 94% in 2003), clindamycin (60% in 1996 and 70% in 2003), and rifampicin (20% in 1996 and 60% in 2003). However, resistance to co-trimoxazole and doxycycline has decreased. In 1996, 15% (32/212) of our MRSA isolates were susceptible to co-trimoxazole, whereas in the first 9 months of 2003, 43% (222/516) of the isolates were susceptible ($p < 0.0001$). Similarly, susceptibility to doxycycline increased from 34% in 1996 to 49% in 2003 ($p = 0.0005$). Antimicrobial drug susceptibility of the isolates was tested by the modified Kirby-Bauer technique and results were interpreted according to the National Committee for Clinical Laboratory Standards criteria (3). Methicillin resistance was tested by using 1 μg oxacillin disks (Oxoid, Basingstoke, Hampshire, UK) on Mueller-Hinton agar containing 4% sodium chloride. Plates were incubated at 35°C for 24 hours.

We agree with Bishara et al. (1) that the increase in susceptibility is likely due to decreased use of these antimicrobial drugs for staphylococcal infections in clinical practice. The use of co-trimoxazole in our hospital decreased from 48 daily doses per 1,000 hospital days in 1996 to 35 daily doses in 2003, while use of doxycycline decreased from 12 daily doses per 1,000 hospital days in 1996 to 9 daily doses in 2003 (4). These antimicrobial drugs offer an inexpen-

sive alternative to glycopeptides for the treatment of MRSA infections. Data from the United States and Europe have shown that vancomycin-intermediate *S. aureus* isolates also remain susceptible to some of the conventional antimicrobial drugs, including co-trimoxazole (5). If their efficacy in vivo is validated by clinical trials, use of these conventional drugs would not only reduce the load on overstretched health care budgets but reduce the use of vancomycin, therefore decreasing the risk of isolates continuing to develop vancomycin resistance.

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Borrelia valaisiana in Cerebrospinal Fluid

To the Editor: Lyme borreliosis is the most common tickborne human disease in the Northern Hemisphere. The incidence of the disease is not the same throughout Europe; in southern Europe, the incidence ranges from 43% in Croatia to 1.1% in Greece. Suspected borreliosis cases have been reported in Greece, none were confirmed. *Ixodes ricinus*, the principal tick vector of *Borrelia burgdorferi* in Europe, is found in northern Greece. A low prevalence of *B. burgdorferi* antibodies was found in healthy persons in Greece (1,2); a frequency of 7.3% was found in arthritis patients (1), while a frequency of 16.9% was found in patients with neurologic disorders (E. Diza, unpub. data).

Polymerase chain reaction (PCR) has been used to detect *B. burgdorferi* DNA in humans and to determine genospecies (3). Isolates found in the United States have constituted a homogeneous group. In Europe, five different genospecies from the original *B. burgdorferi*, now called *burgdorferi sensu lato* complex, have been described: *B. burgdorferi sensu stricto*, *B. garinii*, *B. afzelii*, *B. valaisiana*, and *B. lusitaniae*. Pathogenicity for humans remains uncertain for *B. valaisiana* and *B. lusitaniae* (4).

Neuroborreliosis, the most serious manifestation of disseminated Lyme disease, has become the most frequently recognized arthropodborne infection of the nervous system in the United States and Europe. *B. garinii*, *B. afzelii*, and *B. burgdorferi sensu stricto* are confirmed causes of neuroborreliosis (5); however, *B. valaisiana* has not been isolated from cerebrspinal fluid (CSF) until this report.

We report the genetic detection of *B. valaisiana* in the CSF of a 61-year-old man with a history of spastic paraparesis, which is strong clinical evidence of advanced neuroborreliosis. Symptoms, mainly difficulty in walking, began approximately 10 years earlier, with a slow progressive course of neuroborreliosis. His medical history showed an unidentified sexually transmitted disease in 1982, an undefined episode of arthritis in the lower limbs in 1990, and a nonspecific rash in the genitals in 1995. The patient lived in South Africa from 1961 to 1997 and visited Thassos Island in northern Greece every year. The neurologic examination demonstrated an intense pyramidal spasticity in the lower limbs and moderate weakness (Medical Research Council grade 3) of the proximal muscles. Serial magnetic resonance imaging (MRI) of the brain showed small hyperintensities in the periventricular area on T2-weighted images; MRI of the spinal cord showed no abnormalities. Multiple sclerosis, B12 deficiency, human T-cell lymphotrophic virus-1 infection, structural inflammatory lesions of the spinal cord, motor neuron disease, and hereditary spastic paraplegia have been excluded. The patient was treated occasionally with intravenous penicillin G, as well as with corticosteroids, but no clinical improvement was achieved. Venereal disease reaction level was negative and all tests for syphilis in CSF were negative.

DNA was extracted from CSF, and a region of the chromosomal flagellin gene of *B. burgdorferi* was amplified by nested PCR (3). *B. afzelii* (VS461) DNA was used as a positive control. All precautions were taken to avoid contamination. The amplified PCR product was sequenced, and the sequence (Th1) was deposited in GenBank with the accession no. AY270021. Phylogenetic analysis showed that strain Th1 was clustering with strains belonging to *B. valaisiana* genomic group. Specifically, a nucleotide difference