Streptococcus suis, *Streptococcus mitis*, what is the problem?

In recent months Hong Kong citizens have learned much about a lethal bacterium— *Streptococcus suis*—which has caused at least 38 deaths among 204 people infected in Sichuan province alone. They were told that this bacterium is widely spread among pigs; many carry it without developing any illness. Environmental factors such as high temperature or humidity might trigger off a clinical infection which is then transmitted to humans through unhygienic practices. Although no one is certain about any link with the mainland cases, Hong Kong has had an unusual outbreak this summer—the figure of 11 cases is the highest it has ever been since *S suis* infections were first described here during 1981-1984.[1-3]

In this issue of the Journal, we report a case of *Streptococcus mitis* endocarditis successfully treated by linezolid.[4] Here, the scenario is straightforward—the patient is known to have rheumatic heart disease and *S mitis* is known to cause endocarditis. The important message is that a new class of antibiotics, the oxazolidinones, could be considered if the patient is allergic to a host of the more traditional ones.

Streptococci are a diverse family of bacteria that exist in close contact with animals and humans. Some, like *Streptococcus pyogenes*, were once highly pathogenic (and inflicted more deaths than bullets did in the two world wars) until the advent of penicillin. Some, like *S mitis* (which is a member of the "viridans" group), are oral commensals which only become pathogenic in the presence of diseased or artificial heart valves. Some, like *Streptococcus mutans*, are not directly pathogenic but are implicated in the formation of dental caries. Some behave so distinctly that they are given separate names like pneumococcus and enterococcus.

Many animals harbour their own species of streptococcus: *Streptococcus iniae* in fish, *Streptococcus bovis* in cattle, *S suis* in pigs, etc. When these organisms cross the "species barrier" to infect humans, the result can be a nasty clinical infection like endocarditis, meningitis, or septic arthritis. In the case of *S suis* infection, interestingly, the inner ear becomes a target of infection too.[5]

However, there should be no cause for alarm. Animal-derived or zoonotic bacterial infections are usually self-contained. With good veterinary practice, vigilant epidemiological surveillance, timely public health campaigns, and availability of prompt treatment, we can have no fear of many of the bacteria that surround us. In these respects, the *S suis* outbreak this summer has been an invigorating experience.

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