

Editorial

The SARS war: back to basics

EH Lee

Professor in Orthopaedic Surgery, National University of Singapore

As the United States and the United Kingdom were embroiled in the war in Iraq, many of us in Asia were involved in another war—one with the potential of becoming a serious worldwide epidemic. The battle against severe acute respiratory syndrome (SARS) started as a few cases of ‘atypical pneumonia’ in Guangdong province, China, late last year. The turning point was when a doctor who was infected with the SARS virus travelled to Hong Kong and checked into the Metropole Hotel. Within a few days, many guests staying on the same floor of the hotel became ill with the disease. Many of the guests carried the virus home, starting new clusters of infection in Canada, Vietnam, and Singapore. Within a few weeks, many other countries were seeing cases of SARS, some fatal.

Never in my career as a doctor have I come across a viral infection with such a serious impact on the daily lives of people, health care resources, and the overall economy. Health care workers in Singapore rose to the challenge and worked tirelessly to help contain the infection. The rapid institution of well-fitting protective gear and appropriate barrier techniques has been very effective in reducing the spread of the disease to hospital workers—a precaution that has also been shown to be effective in Frankfurt and Vancouver. In addition, the Singapore government immediately and smoothly implemented public health control measures to ensure the safety of the population: the public was kept informed of all developments through daily press briefings by the Ministry of Health, which also ran a public education campaign on prevention and control of SARS. The Director of Medical Services was put in charge of enforcing quarantine measures under the

Singapore Infectious Disease Act; to encourage compliance, people under quarantine were financially compensated to stay at home. Our scientists and clinicians collaborated to form a SARS Consortium to hone in on the virus responsible, so as to develop a reliable diagnostic test and new treatment options.

From the research on the SARS virus published in the *New England Journal of Medicine* on 10 April, 2003, and from our own research (unpublished data), it is clear that we are dealing primarily with a coronavirus. The race is now on to develop a rapid diagnostic test. The test released by the United States Centers for Disease Control and Prevention and scientists in Canada and Germany is still under evaluation, and has not turned out to be very sensitive thus far. The Genome Institute of Singapore has sequenced the viral genome, and our laboratories are currently validating a test based on the reverse transcriptase-polymerase chain reaction, which so far has shown promise. There is an urgent need for good epidemiological and public health studies, to help us understand the disease so that appropriate control measures can be instituted. In the longer term, our researchers are looking into therapeutic modalities such as vaccines.

The impact of the SARS virus on medical schools and teaching hospitals has been nothing short of catastrophic. In Singapore, alternative plans had to be made quickly so that examinations could continue with stringent temperature checks of invigilators and students. In some cases, clinical attachments had to be curtailed and postponed, and electives cancelled, as students were advised against travel to and from regions affected by SARS. At the time of writing, the rate of

probable SARS infections has fallen in many countries, including Hong Kong and Singapore, and we hope to resume clinical rotations in July, when the new term begins.

Although orthopaedic surgeons have little to do with the respiratory infection, our practice as orthopaedic surgeons has also been drastically affected. As Singapore hospitals geared up to contain the SARS virus, all elective surgical procedures were cancelled. Only clinics dealing with emergency cases, such as trauma, continued to function. Temperatures of all hospital workers were taken three times daily, and health care workers were trained to don protective gear such as goggles, N95 masks, gloves, and gowns. The Tan Tock Seng Hospital was designated Singapore's SARS hospital, and all patients with suspected cases of SARS were sent there for further evaluation and admission when necessary. With quick and firm measures put in place, the rate of SARS infection has fallen in recent days.

It is nevertheless important for us as orthopaedic surgeons to sit back and reflect on our achievements

in the last century. Our expertise in treating shock, wounds, and trauma has been aided by wars such as the First and Second World Wars, the Korean War, and the Vietnam War. Technological advances such as the use of X-rays and other imaging modalities, the development of better biomaterials, the design of better implants, and the discovery of antibiotics have certainly spurred us along. All it takes is a serious infection by a new virus to completely disarm us and render us helpless. Never since the great influenza epidemic in the early part of the 20th century and the more recent AIDS problem have we faced a natural enemy with such potential to disrupt our lives and cripple the global economy. It is humbling to us as orthopaedic surgeons to realise that it will be our public health colleagues, epidemiologists, virologists, basic scientists, and infectious disease experts who will be able to help us solve this current outbreak. Life will not be the same again for years to come: we will have to be more vigilant and take more precautions to avoid spread of infection, locally as well as globally.