

New "China Syndrome" Puzzle



Rigid response. Victim of Chinese mystery syndrome remains stiff when lifted.

HERE'S A MEDICAL PUZZLE: WHAT LOOKS A lot like polio and affects children in Latin America and China—but isn't polio? If you don't know the answer, you're not alone. It's a puzzler that's stumping medical experts, including those who developed the vaccines that conquered polio. "Over the last 3 years, there have been thousands of cases of acute flaccid paralysis in Latin America," says Albert Sabin, the 84-year-old physician who was inventor of the Sabin polio vaccine. "It is obviously a condition that is prevalent in poor countries." And neither Sabin nor anyone else yet knows quite what those cases amount to—as was made clear at a workshop last week.*

Almost none of the 7000 cases of the puzzling condition reported to the Pan American Health Organization (PAHO) in Latin America between 1987 and 1990 are poliomyelitis; and the hundreds of cases crippling and sometimes paralyzing children in northern China every summer also lack some classic hallmarks of polio. Researchers have speculated that they might be cases of the rare and little-understood Guillain-Barré Syndrome (GBS), another paralytic disease. But at last week's workshop it became clear that that explanation isn't holding up either. Says Guy McKhann, a professor of neurology at Johns Hopkins University who organized the workshop: "It is becoming increasingly clear that in some parts of the world, people who meet the clinical criteria for GBS probably have something else."

To complicate things further, the paralysis cases seen in China differ somewhat from those seen in Latin America. What these new paralytic syndromes do share, however, is that, like polio, they attack the motor neurons of the spinal cord and prevent it from generating nerve impulses. That sets them apart from GBS, which attacks the myelin sheath that surrounds peripheral nerve fibers, blocking impulses that already have been fired.

But that distinction wasn't understood until recently, and in China the mystery

cases have been diagnosed in recent years as GBS. That's the reason the Chinese government invited McKhann and some of his Johns Hopkins colleagues specializing in GBS to examine 40 children in northern China last summer. What they found, however, was not GBS but a disease that constitutes medical "virgin territory," says Johns Hopkins physician David Cornblath.

One thing that sets this virgin territory apart from the familiar regions of GBS is its epidemiology. In the United States, GBS is an extremely rare condition, striking about 1 in 20,000 people of all ages. The so-called Chinese Paralytic Syndrome, however, is more prevalent—and it strikes younger patients (half younger than 7).

At the same time, this new "China syndrome" doesn't seem to be polio. For one thing, the children who get it have already been vaccinated against poliovirus. Nor do they exhibit high fevers early in the course of the illness, as happens in polio. Finally, the paralysis is often less extensive than in polio and the children have a better prognosis for eventually recovering most or all of their motor function.

Even less is known about the Latin American cases. As in China, though, Sabin rules out GBS, because autopsies on 40 children who died in Mexico in the 1960s showed that at least half lacked lesions in their peripheral nerves—a key sign of GBS. He says there are also other differences—such as the amount of protein found in the cerebrospinal fluid early in the disease, changes in the neurons and the pattern of stiffness in the children's necks and backs.

Clearly, what's needed here are far more observations and more tests for possible etiologic agents. In Latin America, says Sabin, "we're proposing new PAHO studies to be carried out on these people." That work will include further stool and blood studies, checks for fever and tests for protein in their cerebrospinal fluid (something not usually seen immediately in polio). And further information could also come quite soon about the Chinese cases. The Johns Hopkins team is returning to China this summer, where they hope to find clues that may help to clear up this mysterious syndrome.

■ ANN GIBBONS

UK Cold War

London—For the scientists and engineers who helped build the West's military superiority, the Cold War era may soon start to look like the good old days—at least in Europe. Instead of a peace dividend, warns a report commissioned by Britain's Parliamentary Office of Science and Technology (POST), thousands of scientists and engineers can expect to get pink slips as Europe's defense industry cuts back a predicted one-third of its jobs over the next 6 years.

This paradoxical byproduct of the peace process will be felt nowhere more strongly than in Britain ("only France and the USA face comparable problems," says the report). Here an exceptionally high fraction of the national research and development budget has always been allocated to defense projects. Indeed, if defense cuts are made without boosting the civilian sector, warns the report, whole areas of technological expertise may be lost.

Then again, they could be lost anyway. In Britain, more than most countries, there has traditionally been an enormous gulf between the defense and civilian R&D sectors. Says Martin Edmonds of Lancaster University, who contributed to the report produced for Parliament's science office, "We have separated our defense from civil industry so that there is no synergy between the two." His fear: It may prove extremely difficult to convince private industry to bridge the gap by hiring ex-defense industry researchers, even if they were trained in a discipline needed for civilian applications.

The solution, as expressed in a separate document compiled by the office of science and technology to provide Parliament with policy options, is to "Imitate America." Not imitate what America has so far done for its endangered defense scientists—because that is still precious little—but imitate what the British view as a healthy debate that is growing ever fiercer in Washington. As the report's authors see it, U.S. policy discussions first considered spinoffs from defense research, but quickly moved onto a more fruitful question: Could dual-use technology be encouraged so each sector drives the other?

"We should learn from the Americans who recognize that processes such as computer-aided design and manufacturing are the foundation [of healthy economies]," says Edmonds. But not all of his colleagues are sanguine about the prospect of technology policy transfer from the United States to Britain. "The UK is not facing up to the

*"International Workshop on the Classification of Guillain-Barré Syndrome (GBS)," 27-28 June 1991, sponsored by the Airen Foundation, the NIH, and Johns Hopkins.